Drinking Water Surveillance Program

ATIKOKAN WATER TREATMENT PLANT

Annual Report 1989

Ontario
Environment
Environnement

ISSN 0843-8331

ATIKOKAN
WATER TREATMENT PLANT

DRINKING WATER SURVEILLANCE PROGRAM

ANNUAL REPORT 1989

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January 1991

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92-01615/

EXECUTIVE SUMMARY

DRINKING WATER SURVEILLANCE PROGRAM

ATIKOKAN WATER TREATMENT PLANT
1989 ANNUAL REPORT

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. In 1989, there were 65 supplies being monitored.

The Atikokan Water Treatment Plant is a direct filtration plant which treats water from the Atikokan River which is typically highly coloured. The treatment process consists of coagulation, ozonation, filtration, disinfection and fluoridation. This plant has a design capacity of 3.1 x 1000 m^3/day and serves a population of approximately 4,400.

Water samples of the raw and treated water from the plant and from two locations in the distribution system were taken on a monthly basis and analyzed for approximately 180 parameters. Parameters were divided into the following groups: Bacteriological, Inorganic and Physical (Laboratory Chemistry, Field Chemistry and Metals) and Organic (Chloroaromatics, Pesticides and PCB, Phenolics, Polyaromatic Hydrocarbons and Volatiles). Phenols and PAHs are only analyzed in the water from the plant.

A summary of results is shown in Table A.

Inorganic and Physical parameters were below any applicable health related ODWOs.

Of a total of approximately 110 Organic parameters tested for on a monthly basis, none exceeded health related guidelines.

During 1989 the DWSP sampling results indicated that the Atikokan Water Treatment Plant produced good quality water at the plant and this quality was maintained in the distribution system.

TABLE A

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP

SUMMARY TABLE BY SCAN

SCAN	RAW			TREATED			SITE 1			SITE 3			SITE 2		
	TESTS	POSITIVE	%POSITIVE	TESTS	POSITIVE	%POSITIVE	TESTS	POSITIVE	%POSITIVE	TESTS	POSITIVE	%POSITIVE	TESTS	POSITIVE	%POSITIV
BACTERIOLOGICAL	18	13	72	36	5	13	4	0	0	22	5	22	20	1	
CHEMISTRY (FLD)	27	27	100	54	53	98	19	19	100	82	76	92	94	93	9
CHEMISTRY (LAB)	198	142	71	200	166	83	70	64	91	245	222	90	315	279	8
METALS	240	116	48	240	113	47	94	48	51	329	163	49	400	208	5
CHLOROAROMATICS	126	0	0	126	0	0	28	0	0	98	0	0	126	0	0
CHLOROPHENOLS	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
PAH	160	0	0	160	0	0	.	.	.	.	.	.	.	.	.
PESTICIDES & PCB	319	0	0	306	0	0	68	0	0	186	0	0	254	0	0
PHENOLICS	9	8	88	8	7	87	.	.	.	.	.	.	.	.	.
SPECIFIC PESTICIDES	9	0	0	10	0	0	2	0	0	7	0	0	9	0	0
VOLATILES	174	0	0	203	22	10	.	.	.	116	12	10	203	22	10
TOTAL	1280	306		1343	366		285	131		1085	478		1421	603	

NO KNOWN HEALTH RELATED GUIDELINES WERE EXCEEDED

A POSITIVE VALUE DENOTES THAT THE RESULT IS GREATER THAN THE STATISTICAL LIMIT OF DETECTION AND IS QUANTIFIABLE
A '.' INDICATES THAT NO SAMPLE WAS TAKEN

DRINKING WATER SURVEILLANCE PROGRAM

ATIKOKAN WATER TREATMENT PLANT
1989 ANNUAL REPORT

INTRODUCTION

The Drinking Water Surveillance Program (DWSP) for Ontario is a monitoring program providing immediate, reliable, current information on drinking water quality. The DWSP officially began in April 1986 and is designed to eventually include all municipal supplies in Ontario. In 1989, there were 65 supplies being monitored.

The DWSP was initiated at the Atikokan Water Treatment Plant in October 1988. An Annual report was published for 1988 (ISSN 0843-8331).

This report contains information and results for 1989.

PLANT DESCRIPTION

The Atikokan Water Treatment Plant is a direct filtration plant treating water from the Atikokan River which is typically highly coloured. The process consists of coagulation, ozonation, filtration, disinfection and fluoridation. A polyelectrolyte is added as a coagulant aid, sodium carbonate is added when necessary for pH adjustment. The ozone is employed in a colour removal

process. The plant has a design capacity of 3.1 x 1000 m^3/day and sample day flows ranging from 2.4 x 1000 m^3/day to 3.3 x 1000 m^3/day. This plant serves a population of 4,442.

The plant location is shown in Figure 1. Plant process details, in a block schematic, are shown in Figure 2. General plant information is presented in Table 2.

SAMPLE LOCATIONS

Water samples were obtained from five DWSP approved locations;

i) Plant Raw - The water originated from the lowlift discharge prior to ozonation and was sampled through a stainless steel sample line. The sample tap is located near the lowlift discharge.

ii) Plant Treated - The water originated from the highlift discharge after addition of all treatment chemicals and was sampled through a stainless steel sample line. The sample tap is located near the highlift discharge.

iii) Distribution System - Site 1 - This house is located close to the plant. The type and location of the sample line is unavailable. Sampling at this Site was discontinued in February.

iv) Distribution System - Site 2 - This house is located at the

farther end of the distribution system. The type and location of the sample line is unavailable.

v) Distribution System - Site 3 - This house is located close to the plant. The type and location of the sample line is unavailable. Sampling began at this Site in March.

SAMPLING AND ANALYSES

Sample lines in the plant were flushed prior to sampling to ensure that the water obtained was indicative of its origin and not residual water standing in the sample line.

At the distribution system location two types of samples were obtained: a standing and a free flow. The standing sample consisted of water that had been in the household plumbing and service connection for a minimum of six hours. These samples are used to make an assessment of the amount by which the levels of inorganic compounds and metals may be changed on standing due to leaching from (or deposition on) the plumbing system. The only analyses carried out on the standing samples therefore, are General Chemistry and Metals. The free flow sample represented fresh water from the distribution main that had been flowing at the sample tap for five minutes before being sampled.

FIGURE 1

DRINKING WATER SURVEILLANCE PROGRAM

SITE LOCATION MAP

ATIKOKAN WATER TREATMENT PLANT

FIGURE 2

ATIKOKAN WATER TREATMENT PLANT

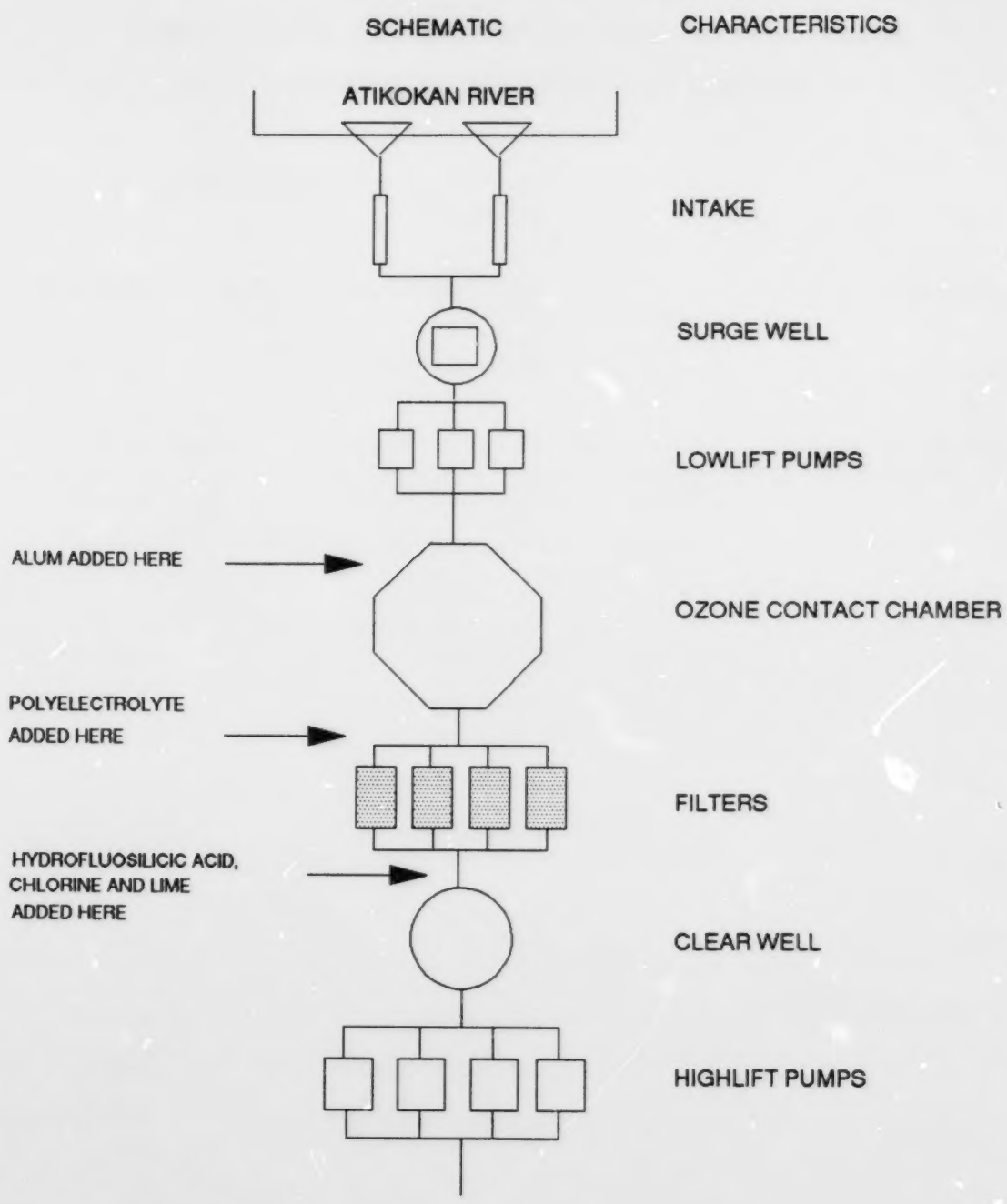

TABLE 1

DRINKING WATER SURVEILLANCE PROGRAM ANNUAL REPORT

PLANT MONITORING ATIKOKAN WATER TREATMENT PLANT 1989

PARAMETER		LOCATION	FREQUENCY
Aluminum		Treated Water	daily
Colour		Treated Water	daily
Chlorine Residual -	combined	Treated Water	daily
	free	Treated water	daily
	total	Treated Water	daily
Fluoride		Treated Water	daily
Ozone		Post Ozonation	continuous
Ozone Residual		After Contact	daily
pH		Before Clear Well	daily
Temperature		Raw Water	daily
Turbidity		Raw Water	daily
		After Filters	continuous
		Clear Well Effluent	continuous

TABLE 2

DRINKING WATER SURVEILLANCE PROGRAM ANNUAL REPORT

GENERAL INFORMATION

ATIKOKAN WATER TREATMENT PLANT

LOCATION:	P.O. BOX 689 ATIKOKAN, ONTARIO P0T 1C0 (807-597-2390)
SOURCE:	RAW WATER SOURCE - ATIKOKAN RIVER AT LITTLE FALLS
DESIGN CAPACITY:	14.09 (1000 M^3/DAY)
OPERATION:	MUNICIPAL
PLANT SUPERINTENDENT:	K. LUSIGNAN
MINISTRY REGION:	NORTHWEST
DISTRICT OFFICER:	P. FOX

MUNICIPALITY SERVED	POPULATION
ATIKOKAN	4,442

Attempts were made to capture the same block of water at each sampling point by taking the retention time into consideration. The retention time was calculated by dividing the volume of water between the two sampling points by the sample day flow. For example, if it was determined that the retention time within the plant was five hours then there would be a five hour interval between the raw and treated sampling. Similarly, if it was estimated that it took approximately one day for the water to travel from the plant to the distribution system site, this site would be sampled one day after the treated water from the plant.

Stringent DWSP sampling protocols were followed to ensure that all samples were taken in a uniform manner.

Plant operating personnel perform analyses on parameters for process control (Table 1).

The Atikokan Water Treatment Plant and two locations in the distribution system were sampled monthly for approximately 180 parameters. Polynuclear Aromatic Hydrocarbons and Phenolics were only analyzed in the raw and treated water at the plant. As of August the triazine pesticides were only analyzed in the raw and treated water.

RESULTS

Field Chemistry measurements were recorded on the day of sampling and were entered on the DWSP data base as submitted by plant personnel.

Table 3 contains information on the sample day retention time, flow rate and treatment chemicals used and their associated dosages.

Table 4 is a summary break-down of the number of water samples analyzed for by parameter and by water type. The number of times that a positive or trace result was detected is also reported.

Positive denotes that the result is greater than the statistical limit of detection established by the Ministry of the Environment (MOE) laboratory staff and is quantifiable. Trace (<T) denotes that the level measured is greater than the lowest value detectable by the method but lies so close to the detection limit that it cannot be confidently quantified.

Table 5 presents the results for parameters detected on at least one occasion.

Table 6 lists all parameters analyzed in the DWSP.

Associated guidelines and detection limits are also supplied on

both tables. Parameters are listed alphabetically within each scan.

DISCUSSION

General

Water quality is judged by comparison with the Ontario Drinking Water Objectives (ODWOs) as defined in the 1984 publication (ISBN 0-7743-8985-0). The Province of Ontario has health related and aesthetic objectives for 49 parameters, these are currently under review. When an ODWO is not available guidelines/limits from other agencies are consulted. The Parameters Listing System (PALIS) recently published (ISBN 0-7729-4461-X) by the MOE catalogues and keeps current over 1750 guidelines for 650 parameters from agencies throughout the world.

Although some of the parameters measured on DWSP may be present in the raw and treated water as a result of pollution, many of the compounds detected are naturally occurring or are treatment by-products.

Plant operational personnel address occurrences of taste and odour or biological water quality parameters. The DWSP does not assess these aspects of the water supply.

As stated under Results, traces do not indicate quantifiable

values, as defined by established MOE Laboratory analytical reporting protocols. The occasional finding of a trace level of a contaminant is thus not considered to be significant. They can be useful in trend analysis, or confirmation of the presence of a specific contaminant that is repeatedly detected at these levels. **DISCUSSION OF GUIDELINES AND LIMITS THEREFORE, IS ONLY CONDUCTED ON POSITIVE RESULTS.**

Bacteriology

Positive results for the Bacteriology scan were present five times in the treated water, five times in the Site 3 water and once in the Site 2 water. The positive parameters were Standard Plate Count, Total Coliform and Total Coliform Background. Total Coliforms were detected at 1 count/100 mL in both the July and December Site 3 water samples.

Guidelines for bacteriological sampling and testing of a supply are developed to maintain a proper supervision of its bacteriological quality; the routine monitoring program usually requires the taking of multiple samples in a given system. Full interpretation of bacteriological quality cannot be made on the basis of single samples. Further, bacteriological limits were developed in acknowledgement that the presence of coliforms may be detected due to their non-uniform distribution throughout the distribution system and the fact that their enumeration is subject to

considerable variation. For these reasons, the occasional finding of low numbers of coliform organisms is not unexpected. Routine bacteriological monitoring, as outlined in the ODWOs is carried out by the operating authority.

Inorganic and Physical Parameters

Laboratory and Field Chemistry

The ODWO of 1.0 FTU for Turbidity was exceeded in samples analyzed in the Laboratory in July and December. However, Field Turbidity results were less than the laboratory measured values and below the ODWO. The length of time elapsed between sampling and analysis may explain the differences; discrepancies between the Laboratory Turbidity and Field Turbidity determinations are being investigated but at this time the field results are being accepted as the more reliable value.

Colour values exceeded the aesthetic ODWO of 5 True Colour Units (TCU) in all treated water samples, standing and free flow samples. Colour in drinking water may be due to the presence of natural or synthetic organic substances as well as certain metallic ions.

The Langelier Index is used extensively in estimating the corrosion potential of water. An increasingly negative index indicates the increasing possibility of corrosion. It is considered sound engineering practice to maintain a slightly positive Langelier

Index. The Langelier Index for Atikokan is consistently negative.

As part of the treatment process, hydrofluosilicic acid is added to the treated water (Table 3). Where fluoridation is practised, the Fluoride concentration recommended in the ODWO is 1.2 mg/L, plus or minus 0.2 mg/L. Results indicate that this level was not maintained and since the fluoride dosages were not reported we cannot comment as to the reason.

It is desirable that the Temperature of drinking water be less than 15°C; the palatability of water is enhanced by its coolness. A temperature below 15°C will tend to reduce the growth of nuisance organisms and hence minimize associated taste, colour, odour and corrosion problems. The temperature of the delivered water may increase in the distribution system due to the warming effect of the soil in late summer and fall and/or as a result of higher temperatures in the source water. The desired ODWO was exceeded eleven times in the treated water and free flow distributed water.

Metals

The results reported for the Metal scan were below any applicable ODWOs.

The levels of Iron and Manganese are lower in the treated water as compared to the raw water. This is a result of the treatment process, the addition of alum as a coagulant to the raw water and

the resulting coagulation/settling process has been shown to reduce the levels of most metals.

Elevated levels of Copper, Lead and Zinc were detected in the standing samples as compared to the free flow distribution samples, indicating that these metals were leached from the household plumbing as the water stood overnight. The Langelier Index indicates that the water has a tendency to corrode.

At present, there is no evidence that Aluminum is physiologically harmful and no health limit for drinking water has been specified. The measure of residual Aluminum in the treated water is important to indicate the efficiency of the treatment process. The ODWOs indicate that a useful guideline is to maintain a residual below 100 µg/L as Al in the water leaving the plant to avoid problems in the distribution system. Aluminum values exceeded the ODWO operational guideline in nine treated water samples.

Organic Parameters

Chloroaromatics

The results of the Chloroaromatics scan showed that no chloroaromatics were detected.

Pesticides and PCB

Results of the Pesticides and PCB scan showed that no PCBs were detected and that two pesticides were detected:

Alpha BHC

Lindane

There are several isomers of BHC (benzene hexachloride); gamma BHC is the active ingredient of the pesticide Lindane, while alpha BHC is the isomer most predominantly found in surface waters of the Great Lakes basin as indicated by results from other water supplies on DWSP.

Alpha BHC was detected at trace levels, four times in the raw water, five times in the treated water, twice in the Site 1 water, three times in the Site 3 water and four times in the Site 2 water.

Lindane was detected at trace levels, three times in the raw water, six times in the treated water, five times in the Site 3 water and five times in the Site 2 water.

Specific Pesticides

The results of the Specific Pesticide scan showed that none were detected.

Phenolics

Phenolics were detected in the raw water, ranging from 1.2 to 5.4

µg/L and in the treated water, ranging from 1.0 to 5.0 µg/L. The maximum desirable concentration of phenolic substances in drinking water is 2.0 µg/L. This limit has been set primarily to prevent the occurrence of undesirable tastes and odours, particularly in chlorinated water. Phenolic compounds are present in the aquatic environment as a result of natural and/or industrial processes.

Polyaromatic Hydrocarbons (PAH)

The results of the PAH scan showed that no PAHs were detected.

Volatiles

The results of the Volatile scan showed that six parameters, other than Trihalomethanes(THMs) were detected:

Toluene
Ethylbenzene
Meta-Xylene
Styrene
1,1,1-Trichloroethane
Tetrachloroethylene

The detection of benzene, ethylbenzene, toluene and the xylenes at low, trace levels is a laboratory artifact derived from the analytical methodology.

Ethylbenzene was detected at trace levels, twice in the treated water, once in the Site 3 water and three times in the Site 2

water.

Meta-Xylene (M-Xylene) was detected at a trace level once in the Site 2 water.

Styrene was detected at 1.9 µg/L in the November Site 2 water. The United States Environmental Protection Agency have a Maximum Contaminant Level for Styrene in drinking water of 5.0 µg/L. The detected trace levels of Styrene are also considered to be laboratory artifacts resulting from the polystyrene shipping containers. The sporadic background levels from this source are in the order of 0.05 µg/L.

The volatiles listed above are typically found on an occasional basis at other water supplies included on the DWSP, usually at trace levels.

1,1,1-Trichloroethane was detected at trace levels, twice in the raw water, once in the treated water, once in the Site 3 water and once in the Site 2 water.

Tetrachloroethylene was detected at a trace level, once in the treated water.

THMs are known to be produced during the water treatment process and will always occur in chlorinated surface waters. THMs are comprised of Chloroform, Chlorodibromomethane and

Dichlorobromomethane. Bromoform occurs occasionally. Results are reported for the individual compounds as well as for total THMs.

Chloroform, Chlorodibromomethane, Dichlorobromomethane and Total THMs were detected in all treated waters. Bromoform was detected at trace levels, in one treated water and one Site 2 water. All Total THM occurrences, ranging from 57.2 µg/L to 260 µg/L were below the ODWO of 350 µg/L.

CONCLUSIONS

The Atikokan Water Treatment Plant for the limited sampling period of 1989 produced good quality water at the plant and this was maintained throughout the distribution system.

Whilst no health related ODWOs were exceeded, the water quality produced by the Atikokan Water Treatment Plant could not be considered satisfactory because of consistently high colour values in the treated water, the inability to achieve the recommended fluoride levels, the inability to fully control the corrosion potential of the water and the high residual aluminum levels.

Considering that the main purpose of the treatment process, including ozone, is to effectively reduce or eliminate colour problems, the process is not successful.

The application should also achieve preoxidation of organic materials and should reduce THMs; the data obtained during this sampling period do not indicate this.

RECOMMENDATIONS

Four recommendations can be made:

1) The process of ozonation at the Atikokan plant should be reviewed and optimized.

2) The fluoridation practice should be modified to ensure that the recommended level is maintained.

3) Corrosion control practices may need to be modified.

4) High aluminum residuals indicating possible treatment problems may warrant further attention.

TABLE 3

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP SAMPLE DAY CONDITIONS FOR 1989

	SAMPLE DAY CONDITIONS		TREATMENT CHEMICAL DOSAGES (MG/L)				
			OZONATION	COAGULATION	COAGULATION AID	POST PH ADJUSTMEN	POST-CHLORINATION
			OZONE	ALUM LIQUID	POLYELECTROLYTE	SODIUM CARBONATE	CHLORINE
DATE	DELAY* TIME(HRS)	FLOW (1000M3)					
JAN 24	9.7	2.4	.	7.00	.16	.	.
FEB 28	.2	2.4	4.62	8.00	.22	.	.
JUN 26	.0	2.6	5.78	10.38	.21	41.98	.64
JUL 25	.0	.0	5.54	10.71	.19	16.71	.
AUG 29	.2	3.3	4.62	10.28	.19	53.07	.73
SEP 27	.0	.0	6.16	12.23	.23	29.10	6.10
OCT 24	.0	.2	6.00	10.60	.20	66.50	.70
NOV 28	.0	.0	6.14	13.31	.22	21.53	2.49
DEC 12	.0	.0	6.16	.	.20	54.38	1.52

* THE DELAY TIME BETWEEN THE RAW AND TREATED WATER SAMPLING, SHOULD ESTIMATE THE RETENTION TIME.

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	RAW			TREATED			SITE 1			SITE 3			SITE 2		
		TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
BACTERIOLOGICAL	AEROMONAS SP	.	.	.	.	.	.	.	.	.	2	0	0	.	.	.
	FECAL COLIFORM MF	9	5	0	.	.	.	.	.	.	.	.	.	.	.	.
	FECAL COLIFORM	.	.	.	9	0	0	1	0	0	4	0	0	5	0	0
	FECAL STREPTO MF	0	0	0	.	.	.	.	.	.	.	.	.	.	.	.
	FECAL STREPTOCOCCUS	.	.	.	.	.	.	.	.	.	2	0	0	.	.	.
	STANDRD PLATE CNT MF	.	.	.	9	5	0	1	0	0	4	2	0	5	1	0
	PSEUDOMON AERUGINOSA	.	.	.	.	.	.	.	.	.	2	0	0	.	.	.
	COLIFORM	.	.	.	9	0	0	1	0	0	4	2	0	5	0	0
	TOTAL COLIFORM MF	7	8	0	9	0	0	1	0	0	4	1	0	5	0	0
*TOTAL SCAN BACTERIOLOGICAL		18	13	0	36	5	0	4	0	0	22	5	0	20	1	0
*TOTAL GROUP BACTERIOLOGICAL		18	13	0	36	5	0	4	0	0	22	5	0	20	1	0
CHEMISTRY (FLD)	FLD CHLORINE (COMB)	.	.	.	9	8	0	3	3	0	13	11	0	16	15	0
	FLD CHLORINE FREE	.	.	.	9	9	0	1	1	0	14	12	0	16	16	0
	FLD CHLORINE (TOTAL)	.	.	.	9	9	0	3	3	0	14	12	0	16	16	0
	FLD PH	9	9	0	9	9	0	4	4	0	14	14	0	16	16	0
	FLD TEMPERATURE	9	9	0	9	9	0	4	4	0	14	14	0	16	16	0
	FLD TURBIDITY	9	9	0	9	9	0	4	4	0	13	13	0	14	14	0
*TOTAL SCAN CHEMISTRY (FLD)		27	27	0	54	53	0	19	19	0	82	76	0	94	93	0
CHEMISTRY (LAB)	ALKALINITY	10	10	0	10	10	0	4	4	0	14	14	0	18	18	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 3 TOTAL	SITE 3 POSITIVE	SITE 3 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
CHEMISTRY (LAB)	CALCIUM	10	10	0	10	10	0	4	4	0	14	14	0	18	18	0
	CYANIDE	10	0	0	10	0	0	2	0	0	7	0	0	9	0	0
	CHLORIDE	10	10	0	10	10	0	4	4	0	14	14	0	18	18	0
	COLOUR	10	10	0	10	10	0	4	4	0	14	14	0	18	18	0
	CONDUCTIVITY	10	10	0	10	10	0	4	4	0	14	14	0	18	18	0
	FLUORIDE	10	1	9	10	10	0	4	4	0	14	14	0	18	18	0
	HARDNESS	10	10	0	10	10	0	4	4	0	14	14	0	18	18	0
	IONCAL	10	10	0	10	10	0	4	4	0	14	14	0	18	18	0
	LANGELIERS INDEX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	MAGNESIUM	10	10	0	10	10	0	4	4	0	14	14	0	18	18	0
	SODIUM	10	10	0	10	10	0	4	4	0	14	14	0	18	18	0
	AMMONIUM TOTAL	10	6	2	10	3	6	4	4	0	14	6	5	18	6	6
	NITRITE	10	4	6	10	0	10	4	0	4	14	6	8	18	3	15
	TOTAL NITRATES	10	2	5	10	10	0	4	4	0	14	14	0	18	18	0
	NITROGEN TOT KJELD	9	8	0	10	10	0	4	4	0	14	14	0	18	18	0
	PH	10	10	0	10	10	0	4	4	0	14	14	0	18	18	0
	PHOSPHORUS FIL REACT	10	1	4	10	7	2	.	.	.	.	.	.	.	.	.
	PHOSPHORUS TOTAL	9	1	6	10	6	4	.	.	.	.	.	.	.	.	.
	SULPHATE	10	9	1	10	10	0	4	4	0	14	14	0	18	18	0
	TURBIDITY	10	10	0	10	10	0	4	4	0	14	14	0	18	18	0
*TOTAL SCAN CHEMISTRY (LAB)		198	142	33	200	166	22	70	64	4	245	222	13	315	279	21
METALS	SILVER	10	0	1	10	0	0	4	0	0	14	0	2	17	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 3 TOTAL	SITE 3 POSITIVE	SITE 3 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
METALS	ALUMINUM	10	10	0	10	10	0	4	4	0	14	14	0	17	17	0
	ARSENIC	10	9	1	10	8	2	4	3	1	14	13	1	17	15	2
	BARIUM	10	10	0	10	10	0	4	4	0	14	14	0	17	17	0
	BORON	10	1	9	10	1	9	4	2	2	14	0	14	17	1	16
	BERYLLIUM	10	0	4	10	0	2	4	0	3	14	0	6	17	0	5
	CADMIUM	10	0	1	10	0	1	4	0	2	14	0	3	17	1	4
	COBALT	10	0	10	10	0	10	4	0	4	14	0	14	17	0	17
	CHROMIUM	10	6	1	10	7	1	4	2	1	14	6	3	17	11	5
	COPPER	10	9	1	10	9	1	4	4	0	14	14	0	17	17	0
	IRON	10	10	0	10	10	0	4	4	0	14	14	0	17	17	0
	MERCURY	10	7	2	10	7	2	2	1	0	7	6	1	9	6	0
	MANGANESE	10	10	0	10	10	0	4	4	0	14	14	0	17	17	0
	MOLYBDENUM	10	0	10	10	0	10	4	0	4	14	0	14	17	0	17
	NICKEL	10	1	8	10	0	9	4	1	2	14	2	10	17	3	11
	LEAD	10	9	1	10	6	3	4	4	0	14	13	1	17	17	0
	ANTIMONY	10	8	2	10	8	2	4	3	1	14	12	2	17	17	0
	SELENIUM	10	0	2	10	0	3	4	0	3	14	0	0	17	0	5
	STRONTIUM	10	10	0	10	10	0	4	4	0	14	14	0	17	17	0
	TITANIUM	10	9	1	10	9	1	4	4	0	14	12	2	17	17	0
	THALLIUM	10	0	3	10	0	2	4	0	0	14	0	3	17	0	3
	URANIUM	10	0	3	10	0	7	4	0	3	14	0	10	17	0	13
	VANADIUM	10	0	10	10	1	9	4	0	4	14	1	13	17	1	16
	ZINC	10	7	3	10	7	3	4	4	0	14	14	0	17	17	0
*TOTAL SCAN METALS		240	116	73	240	113	77	94	48	30	329	163	99	400	208	114
*TOTAL GROUP INORGANIC & PHYSICAL		465	285	106	494	332	99	183	131	34	656	461	112	809	580	135

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 3 TOTAL	SITE 3 POSITIVE	SITE 3 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
CHLOROAROMATICS	HEXACHLOROBUTADIENE	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	123 TRICHLOROBENZENE	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	1234 T-CHLOROBENZENE	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	1235 T-CHLOROBENZENE	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	124 TRICHLOROBENZENE	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	1245 T-CHLOROBENZENE	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	135 TRICHLOROBENZENE	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	HCB	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	HEXACHLOROETHANE	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	OCTACHLOROSTYRENE	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	PENTACHLOROBENZENE	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	236 TRICHLOROTOLUENE	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	245 TRICHLOROTOLUENE	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	26A TRICHLOROTOLUENE	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
*TOTAL SCAN CHLOROAROMATICS		126	0	0	126	0	0	28	0	0	98	0	0	126	0	0
CHLOROPHENOLS	234 TRICHLOROPHENOL	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	2345 T-CHLOROPHENOL	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	2356 T-CHLOROPHENOL	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	245-TRICHLOROPHENOL	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	246-TRICHLOROPHENOL	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	PENTACHLOROPHENOL	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
*TOTAL SCAN CHLOROPHENOLS		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN

SUMMARY TABLE OF RESULTS (1989)

		SITE														
		RAW			TREATED			SITE 1			SITE 3			SITE 2		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
PAH	PHENANTHRENE	10	0	0	10	0	0	.	.	.	.	.	.	.	.	.
	ANTHRACENE	10	0	0	10	0	0	.	.	.	.	.	.	.	.	.
	FLUORANTHENE	10	0	0	10	0	0	.	.	.	.	.	.	.	.	.
	PYRENE	10	0	0	10	0	0	.	.	.	.	.	.	.	.	.
	BENZO(A)ANTHRACENE	10	0	0	10	0	0	.	.	.	.	.	.	.	.	.
	CHRYSENE	10	0	0	10	0	0	.	.	.	.	.	.	.	.	.
	DIMETH. BENZ(A)ANTHR	6	0	0	6	0	0	.	.	.	.	.	.	.	.	.
	BENZO(E) PYRENE	10	0	0	10	0	0	.	.	.	.	.	.	.	.	.
	BENZO(B) FLUORANTHEN	10	0	0	10	0	0	.	.	.	.	.	.	.	.	.
	PERYLENE	10	0	0	10	0	0	.	.	.	.	.	.	.	.	.
	BENZO(K) FLUORANTHEN	10	0	0	10	0	0	.	.	.	.	.	.	.	.	.
	BENZO(A) PYRENE	4	0	0	4	0	0	.	.	.	.	.	.	.	.	.
	BENZO(G,H,I) PERYLEN	10	0	0	10	0	0	.	.	.	.	.	.	.	.	.
	DIBENZO(A,H) ANTHRAC	10	0	0	10	0	0	.	.	.	.	.	.	.	.	.
	INDENO(1,2,3-C,D) PY	10	0	0	10	0	0	.	.	.	.	.	.	.	.	.
	BENZO(B) CHRYSENE	10	0	0	10	0	0	.	.	.	.	.	.	.	.	.
	CORONENE	10	0	0	10	0	0	.	.	.	.	.	.	.	.	.
*TOTAL SCAN PAH		160	0	0	160	0	0	0	0	0	0	0	0	0	0	0
PESTICIDES & PCB	ALDRIN	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	ALPHA BHC	9	0	4	9	0	5	2	0	2	7	0	3	9	0	4
	BETA BHC	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	LINDANE	9	0	3	9	0	6	2	0	0	7	0	5	9	0	5

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN

SUMMARY TABLE OF RESULTS (1989)

		SITE														
		RAW			TREATED			SITE 1			SITE 3			SITE 2		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
PESTICIDES & PCB	ALPHA CHLORDANE	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	GAMMA CHLORDANE	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	DIELDRIN	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	METHOXYCHLOR	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	ENDOSULFAN I	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	ENDOSULFAN II	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	ENDRIN	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	ENDOSULFAN SULPHATE	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	HEPTACHLOR EPOXIDE	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	HEPTACHLOR	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	MIREX	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	OXYCHLORDANE	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	OPDDT	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	PCB	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	DDD	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	PPDDE	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	PPDDT	9	0	0	9	0	0	2	0	0	7	0	0	9	0	0
	AMETRINE	10	0	0	9	0	0	2	0	0	3	0	0	5	0	0
	ATRAZINE	10	0	0	9	0	0	2	0	0	3	0	0	5	0	0
	ATRATONE	10	0	0	9	0	0	2	0	0	3	0	0	5	0	0
	CYANAZINE (BLADEX)	10	0	0	9	0	0	2	0	0	3	0	0	5	0	0
	D-ETHYL ATRAZINE	10	0	0	9	0	0	2	0	0	3	0	0	5	0	0
	D-ETHYL SIMAZINE	10	0	0	9	0	0	2	0	0	3	0	0	5	0	0
	PROMETONE	10	0	0	9	0	0	2	0	0	3	0	0	5	0	0
	PROPAZINE	10	0	0	9	0	0	2	0	0	3	0	0	5	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN

SUMMARY TABLE OF RESULTS (1989)

		SITE														
		RAW			TREATED			SITE 1			SITE 3			SITE 2		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
PESTICIDES & PCB	PROMETRYNE	10	0	0	9	0	0	2	0	0	3	0	0	5	0	0
	METRIBUZIN (SENCOR)	10	0	0	9	0	0	2	0	0	3	0	0	5	0	0
	SIMAZINE	10	0	0	9	0	0	2	0	0	3	0	0	5	0	0
	ALACHLOR (LASSO)	10	0	0	9	0	0	2	0	0	3	0	0	5	0	0
	METOLACHLOR	10	0	0	9	0	0	2	0	0	3	0	0	5	0	0
*TOTAL SCAN PESTICIDES & PCB		319	0	7	306	0	11	68	0	2	186	0	8	254	0	9
PHENOLICS	PHENOLICS	9	8	1	8	7	1	.	.	.	.	.	.	.	.	.
*TOTAL SCAN PHENOLICS		9	8	1	8	7	1	0	0	0	0	0	0	0	0	0
SPECIFIC PESTICIDES	TOXAPHENE	9	0	0	10	0	0	2	0	0	7	0	0	9	0	0
	2,4,5-T	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	2,4-D	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	2,4-DB	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	2,4 D PROPIONIC ACID	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	DICAMBA	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	PICHLORAM	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	SILVEX	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	DIAZINON	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	DICHLOROVOS	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	CHLORPYRIFOS	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN

SUMMARY TABLE OF RESULTS (1989)

		SITE														
		RAW			TREATED			SITE 1			SITE 3			SITE 2		
SCAN	PARAMETER	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE	TOTAL	POSITIVE	TRACE
SPECIFIC PESTICIDES	ETHION	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	AZINPHOS-METHYL	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	MALATHION	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	MEVINPHOS	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	METHYL PARATHION	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	METHYLTRITHION	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	PARATHION	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	PHORATE	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	RELDAN	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	RONNEL	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	AMINOCARB	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	BENOMYL	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	BUX	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	CARBOFURAN	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	CICP	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	DIALLATE	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	EPTAM	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	IPC	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	PROPOXUR	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	CARBARYL	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
	BUTYLATE	0	0	0	0	0	0	.	.	.	.	.	.	.	.	.
*TOTAL SCAN SPECIFIC PESTICIDES		9	0	0	10	0	0	2	0	0	7	0	0	9	0	0
VOLATILES	BENZENE	6	0	0	7	0	0	.	.	.	4	0	0	7	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 3 TOTAL	SITE 3 POSITIVE	SITE 3 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
VOLATILES	TOLUENE	6	0	1	7	0	7	.	.	.	4	0	3	7	0	6
	ETHYLBENZENE	6	0	0	7	0	2	.	.	.	4	0	1	7	0	3
	P-XYLENE	6	0	0	7	0	0	.	.	.	4	0	0	7	0	0
	M-XYLENE	6	0	0	7	0	0	.	.	.	4	0	0	7	0	1
	O-XYLENE	6	0	0	7	0	0	.	.	.	4	0	0	7	0	0
	STYRENE	6	0	2	7	0	4	.	.	.	4	0	4	7	1	6
	1,1 DICHLOROETHYLENE	6	0	0	7	0	0	.	.	.	4	0	0	7	0	0
	METHYLENE CHLORIDE	6	0	0	7	0	0	.	.	.	4	0	0	7	0	0
	T1,2DICHLOROETHYLENE	6	0	0	7	0	0	.	.	.	4	0	0	7	0	0
	1,1 DICHLOROETHANE	6	0	0	7	0	0	.	.	.	4	0	0	7	0	0
	CHLOROFORM	6	0	4	7	7	0	.	.	.	4	4	0	7	7	0
	111, TRICHLOROETHANE	6	0	2	7	0	1	.	.	.	4	0	1	7	0	1
	1,2 DICHLOROETHANE	6	0	0	7	0	0	.	.	.	4	0	0	7	0	0
	CARBON TETRACHLORIDE	6	0	0	7	0	0	.	.	.	4	0	0	7	0	0
	1,2 DICHLOROPROPANE	6	0	0	7	0	0	.	.	.	4	0	0	7	0	0
	TRICHLOROETHYLENE	6	0	0	7	0	0	.	.	.	4	0	0	7	0	0
	DICHLOROBROMOMETHANE	6	0	2	7	7	0	.	.	.	4	4	0	7	7	0
	112 TRICHLOROETHANE	6	0	0	7	0	0	.	.	.	4	0	0	7	0	0
	CHLORODIBROMOMETHANE	6	0	1	7	1	5	.	.	.	4	0	4	7	0	6
	T-CHLOROETHYLENE	6	0	0	7	0	1	.	.	.	4	0	0	7	0	0
	BROMOFORM	6	0	0	7	0	1	.	.	.	4	0	0	7	0	1
	1122 T-CHLOROETHANE	6	0	0	7	0	0	.	.	.	4	0	0	7	0	0
	CHLOROBENZENE	6	0	0	7	0	0	.	.	.	4	0	0	7	0	0
	1,4 DICHLOROBENZENE	6	0	0	7	0	0	.	.	.	4	0	0	7	0	0
	1,3 DICHLOROBENZENE	6	0	0	7	0	0	.	.	.	4	0	0	7	0	0

TABLE 4

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN

SUMMARY TABLE OF RESULTS (1989)

SCAN	PARAMETER	SITE RAW TOTAL	RAW POSITIVE	RAW TRACE	TREATED TOTAL	TREATED POSITIVE	TREATED TRACE	SITE 1 TOTAL	SITE 1 POSITIVE	SITE 1 TRACE	SITE 3 TOTAL	SITE 3 POSITIVE	SITE 3 TRACE	SITE 2 TOTAL	SITE 2 POSITIVE	SITE 2 TRACE
VOLATILES	1,2 DICHLOROBENZENE	6	0	0	7	0	0	.	.	.	4	0	0	7	0	0
	ETHLYENE DIBROMIDE	6	0	0	7	0	0	.	.	.	4	0	0	7	0	0
	TOTL TRIHALOMETHANES	6	0	2	7	7	0	.	.	.	4	4	0	7	7	0
*TOTAL SCAN VOLATILES		174	0	14	203	22	21	0	0	0	116	12	13	203	22	24
*TOTAL GROUP ORGANIC		797	8	22	813	29	33	98	0	2	407	12	21	592	22	33
TOTAL		1280	306	128	1343	366	132	285	131	36	1085	478	133	1421	603	168

KEY TO TABLE 5 and 6

A ONTARIO DRINKING WATER OBJECTIVES (ODWO)

1. Maximum Acceptable Concentration (MAC)

1+. MAC for Total Trihalomethanes

1*. MAC for Bacteriological Analyses
Poor water quality is indicated when :
- total coliform counts > 0 < 5
- P/A Bottle Test is present after 48 hours
- Aeromonas organisms are detected in more than 25% of samples in a single submission or in successive submissions from the same sampling site
- Pseudomonas Aeruginosa, Staphylococcus Aureus and members of the Fecal Streptococcus group should not be detected in any sample
- Standard Plate Count should not exceed 500 organisms per ml at 35 ^{0}C within 48 hours

2. Interim Maximum Acceptable Concentration (IMAC)
3. Maximum Desirable Concentration (MDC)
4. Aesthetic or Recommended Operational Guideline
- hardness levels between 80 and 100 mg/L as calcium carbonate are considered to provide an acceptable balance between corrosion and incrustation, water supplies with a hardness >200 mg/L are considered poor and those in excess of 500 mg/L are unacceptable.

B HEALTH & WELFARE CANADA (H&W)
1. Maximum Acceptable Concentration (MAC)
2. Proposed MAC
3. Interim MAC
4. Aesthetic Objective (AO) (for xylenes, a total)

C WORLD HEALTH ORGANIZATION (WHO)
1. Guideline Value (GV)
2. Tentative GV
3. Aesthetic GV

D US ENVIRONMENTAL PROTECTION AGENCY (EPA)
1. Maximum Contaminant Level (MCL)
2. Suggested No-Adverse Effect Level (SNAEL)
3. Lifetime Health Advisory
4. EPA Ambient Water Quality Criteria
5. Maximum Contaminant Level Goal (MCLG)

F EUROPEAN ECONOMIC COMMUNITY (EEC)
1. Health Related Guideline Level
2. Aesthetic Guideline Level
3. Maximum Admissable Concentration (MADC)

G CALIFORNIA STATE DEPARTMENT OF HEALTH-GUIDELINE VALUE

H USSR MAXIMUM PERMISSIBLE CONCENTRATION

I NEW YORK STATE AMBIENT WATER GUIDELINE

N/A NONE AVAILABLE

INTERPRETATION OF DATA

The interpretation of analytical results that are obtained from measurements near the limit of detection of the measurement process is subject to greater uncertainty than those at higher concentrations. The principle areas of concern relate to whether the substance has actually been detected, whether it has been properly identified, and whether it is an artifact of the measurement process. In other words, false positives can be caused by the instrumentation or the test procedures used, when in fact these compounds are not present in the sample.

There are several methods to treat data from such measurements:
1. Exclude the low-level data because of this uncertainty factor. However, studies of long-term environmental trends and modelling may be adversely affected by exclusion of such data.
2. Qualify these data so the user is aware of the greater uncertainty associated with their use.

For the Drinking Water Surveillance Program, measurements near the limit of detection of the measurement process are reported qualified by the code "<T". Results quantified by "W" indicate a zero measurement. These results are reported for purposes of modelling and long-term trend analysis and no significance should be attributed to a single determination of a substance below "T" (a single determination may well be a false positive). Repeat analysis or additional data are needed before it can be stated with certainty that the substance in question was truly present. On the other hand, it is less likely that repeated detection of a substance at or near the limit of detection at a specific location is solely due to an artifact in the measurement system, and more likely represents a true positive. However the average of such data is still only an estimate of the amount of substance present subject to the possible biases of the method used.

LABORATORY RESULTS, REMARK DESCRIPTIONS

.	No Sample Taken
BDL	Below Minimum Measurable Amount
<T	Greater Than Detection Limit But Not Confident (SEE INTERPRETATION OF RESULTS ABOVE)
>	Results Are Greater Than The Upper Limit
<=>	Approximate Result
!AW	No Data: Analysis Withdrawn
!CR	No Data: Could Not Confirm By Reanalysis
!CS	No Data: Contamination Suspected
!IL	No Data: Sample Incorrectly Labelled
!IP	No Data: Insufficient Preservative
!IS	No Data: Insufficient Sample

!LA	No Data: Laboratory Accident
!LD	No Data: Test Queued After Sample Discarded
!NA	No Data: No Authorization To Perform Reanalysis
!NP	No Data: No Procedure
!NR	No Data: Sample Not Received
!OP	No Data: Obscured Plate
!QU	No Data: Quality Control Unacceptable
!PE	No Data: Procedural Error - Sample Discarded
!PH	No Data: Sample pH Outside Valid Range
!RE	No Data: Received Empty
!RO	No Data: See Attached Report (no numeric results)
!SM	No Data: Sample Missing
!SS	No Data: Send Separate Sample Properly Preserved
!UI	No Data: Indeterminant Interference
!TX	No Data: Time Expired
A3C	Approximate, Total Count Exceeded 300 Colonies
APL	Additional Peak, Large, Not Priority Pollutant
APS	Additional Peak, Less Than, Not Priority Pollutant
CIC	Possible Contamination, Improper Cap
CRO	Calculated Result Only
PPS	Test Performed On Preserved Sample
RMP	P and M-Xylene Not Separated
RRV	Rerun Verification
RVU	Reported Value Unusual
SPS	Several Peaks, Small, Not Priority Pollutant
UCR	Unreliable: Could Not Confirm By Reanalysis
UCS	Unreliable: Contamination Suspected
UIN	Unreliable: Indeterminant Interference
XP	Positive After X Number of Hours
T# (T06)	Result Taken After # Hours

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 3		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
BACTERIOLOGICAL								
AEROMONAS SP ( )			DET'N LIMIT = N/A		GUIDELINE = 0 (A1)			
JUL	.	.	.	.	.	0	.	.
DEC	.	.	.	.	.	0	.	.
FECAL COLIFORM MF (CT/100ML)			DET'N LIMIT = 0		GUIDELINE = 0 (A1)			
JAN	BDL	.	.	.	.	.	.	.
FEB	4	.	.	.	.	.	.	.
APR	BDL	.	.	.	.	.	.	.
MAY	10	.	.	.	.	.	.	.
JUN	4	.	.	.	.	.	.	.
JUL	10	.	.	.	.	.	.	.
OCT	2	.	.	.	.	.	.	.
NOV	BDL	.	.	.	.	.	.	.
DEC	BDL	.	.	.	.	.	.	.
FECAL COLIFORM ( )			DET'N LIMIT = N/A		GUIDELINE = 0 (A1)			
JAN	.	0	.	.	.	.	.	.
FEB	.	0	.	0	.	.	.	0
APR	.	0	.	.	.	.	.	.
MAY	.	0	.	.	.	.	.	.
JUN	.	0	.	.	.	0	.	0
JUL	.	0	.	.	.	0	.	0
OCT	.	0	.	.	.	.	.	0
NOV	.	0	.	.	.	0	.	0
DEC	.	0	.	.	.	0	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE TYPE	WATER TREATMENT PLANT RAW	WATER TREATMENT PLANT TREATED	DISTRIBUTION SYSTEM SITE 1 STANDING	DISTRIBUTION SYSTEM SITE 1 FREE FLOW	DISTRIBUTION SYSTEM SITE 3 STANDING	DISTRIBUTION SYSTEM SITE 3 FREE FLOW	DISTRIBUTION SYSTEM SITE 2 STANDING	DISTRIBUTION SYSTEM SITE 2 FREE FLOW
FECAL STREPTOCOCCUS ( )	DET'N LIMIT = N/A				GUIDELINE = 0 (A1)			
JUL	.	.	.	.	.	0	.	.
DEC	.	.	.	.	.	0	.	.
STANDRD PLATE CNT MF ( )	DET'N LIMIT = 0				GUIDELINE = 500/ML (A1)			
JAN	.	1	.	.	.	.	.	.
FEB	.	0	.	0	.	.	.	0
APR	.	1	.	.	.	.	.	.
MAY	.	14	.	.	.	.	.	.
JUN	.	0	.	.	.	80	.	0
JUL	.	1	.	.	.	9	.	0
OCT	.	0	.	.	.	.	.	2
NOV	.	0	.	.	.	0	.	0
DEC	.	1	.	.	.	0	.	.
PSEUDOMON AERUGINOSA ( )	DET'N LIMIT = N/A				GUIDELINE = 0 (A1)			
JUL	.	.	.	.	.	0	.	.
DEC	.	.	.	.	.	0	.	.
COLIFORM ( )	DET'N LIMIT = N/A				GUIDELINE = 0 (A1)			
JAN	.	0	.	.	.	.	.	.
FEB	.	0	.	0	.	.	.	0
APR	.	0	.	.	.	.	.	.
MAY	.	0	.	.	.	.	.	.
JUN	.	0	.	.	.	0	.	0

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE TYPE	RAW	TREATED	WATER TREATMENT PLANT		DISTRIBUTION SYSTEN			
			SITE 1		SITE 3		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
JUL	.	0	.	.	.	1	.	0
OCT	.	0	.	.	.	.	.	0
NOV	.	0	.	.	.	0	.	0
DEC	.	0	.	.	.	1	.	.
TOTAL COLIFORM MF (CT/100ML)			DET'N LIMIT = 0		GUIDELINE = 5/100ML(A1)			
JAN	BDL	0	.	.	.	.	.	.
FEB	20	0	.	0	.	.	.	0
APR	8	0	.	.	.	.	.	.
MAY	32	0	.	.	.	0	.	0
JUN	92	0	.	.	.	0	.	0
JUL	116	0	.	.	.	.	.	0
OCT	60	0	.	.	.	0	.	0
NOV	16	0	.	.	.	1	.	.
DEC	100	0	.	.	.		.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

		WATER TREATMENT PLANT			DISTRIBUTION SYSTEM			
SITE TYPE	RAW	TREATED	SITE 1		SITE 3		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
CHEMISTRY (FLD)								
FLD CHLORINE (COMB) ( )			DET'N LIMIT = N/A		GUIDELINE = N/A			
JAN	.	.200	.300	.300	.	.	.200	.200
FEB	.	.200	.	.200	.	.	.200	.400
MAY	.	.	.	.	.	.400	.	.
JUN	.	.400	.	.	.200	.200	.200	.200
JUL	.	.400	.	.	.100	.100	.200	.300
AUG	.	.000	.	.	.000	.000	.200	.300
SEP	.	.100	.	.	.100	.100	.100	.000
OCT	.	.500	.	.	.	.	.300	.300
NOV	.	.600	.	.	.100	.400	.200	.400
DEC	.	.300	.	.	.300	.200	.	.
FLD CHLORINE FREE ( )			DET'N LIMIT = N/A		GUIDELINE = N/A			
JAN	.	.900	.	.	.	.	.100	.100
FEB	.	1.000	.	.300	.	.	.100	.100
MAY	.	.	.	.	.100	.100	.	.
JUN	.	1.100	.	.	.100	.100	.100	.100
JUL	.	1.600	.	.	.100	.100	.100	.100
AUG	.	2.000	.	.	.000	.000	.100	.100
SEP	.	1.900	.	.	.100	.100	.100	.100
OCT	.	1.500	.	.	.	.	.100	.400
NOV	.	1.800	.	.	.100	1.400	.300	.500
DEC	.	1.900	.	.	.100	1.000	.	.
FLD CHLORINE (TOTAL) ( )			DET'N LIMIT = N/A		GUIDELINE = N/A			
JAN	.	1.100	.300	.300	.	.	.300	.300

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 3		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
FEB	.	1.200	.	.500	.	.	.300	.500
MAY	.	.	.	.	.100	.500	.	.
JUN	.	1.500	.	.	.300	.300	.300	.300
JUL	.	2.000	.	.	.200	.200	.300	.400
AUG	.	2.000	.	.	.000	.000	.300	.400
SEP	.	2.000	.	.	.200	.200	.200	.100
OCT	.	2.000	.	.	.	.	.400	.700
NOV	.	2.400	.	.	.200	1.800	.500	.900
DEC	.	2.200	.	.	.400	1.200	.	.
FLD PH (DIMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = 6.5-8.5(A4)			
JAN	7.120	7.300	7.200	7.200	.	.	7.300	7.300
FEB	6.900	8.160	7.590	7.520	.	.	7.500	7.500
MAY	.	.	.	.	6.800	6.800	.	.
JUN	7.210	6.970	.	.	6.800	6.850	7.000	6.900
JUL	7.270	6.800	.	.	6.800	6.800	6.800	6.800
AUG	7.410	7.090	.	.	6.900	6.900	7.000	6.400
SEP	7.300	6.800	.	.	6.600	6.600	6.700	6.700
OCT	7.000	7.390	.	.	.	.	7.300	7.300
NOV	6.980	6.500	.	.	7.100	7.000	6.900	7.000
DEC	6.800	8.200	.	.	7.500	7.500	.	.
FLD TEMPERATURE (DEG.C)			DET'N LIMIT = N/A		GUIDELINE = 15 (A1)			
JAN	1.500	3.500	6.000	3.000	.	.	7.500	5.000
FEB	.400	3.200	12.600	2.600	.	.	6.000	2.000
MAY	.	.	.	.	13.000	12.000	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 3		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
JUN	22.500	24.000	.	.	17.500	14.000	14.000	12.000
JUL	28.900	29.100	.	.	21.700	21.700	18.000	18.000
AUG	24.400	25.000	.	.	19.000	19.000	18.000	18.500
SEP	14.800	16.900	.	.	17.000	17.000	16.000	16.000
OCT	8.800	8.900	.	.	.	.	13.000	12.000
NOV	2.200	2.200	.	.	10.000	10.000	10.000	7.000
DEC	19.000	16.000	.	.	13.000	10.000	.	.
FLD TURBIDITY (FTU)			DET'N LIMIT = N/A		GUIDELINE = 1.0 (A1)			
JAN	.920	.780	.940	.920	.	.	.970	.880
FEB	1.000	.600	1.040	.620	.	.	.650	.790
MAY	.	.	.	.	.950	.810	.	.
JUN	1.100	.830	.	.	1.120	.	.980	.870
JUL	.820	.710	.	.	1.100	.870	1.200	.900
AUG	1.040	.640	.	.	1.040	.840	.	.
SEP	.910	.730	.	.	1.320	.850	1.310	.760
OCT	.970	.980	.	.	.	.	1.100	.960
NOV	1.010	.930	.	.	1.540	1.450	1.100	1.200
DEC	.930	.520	.	.	.820	.840	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
			SITE 1		SITE 3		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
CHEMISTRY (LAB)								
ALKALINITY (MG/L)			DET'N LIMIT = .200		GUIDELINE = 30-500 (A4)			
JAN	25.100	41.900	39.800	41.200	.	.	40.000	39.400
FEB	25.700	61.100	53.200	57.400	.	.	60.100	57.800
MAY	23.500	30.000	.	.	29.400	32.700	27.100	27.200
JUN	24.600	35.800	.	.	37.400	36.400	35.900	35.900
JUL	25.700	32.000	.	.	31.200	28.800	30.500	30.200
AUG	24.800	34.200	.	.	33.400	33.900	31.400	31.300
SEP	26.300	15.300	.	.	17.000	21.400	16.800	16.200
OCT	26.000	48.000	.	.	.	.	43.800	44.000
NOV	29.600	27.300	.	.	40.100	32.900	39.800	37.800
DEC	27.900	51.200	.	.	53.200	52.600	.	.
CALCIUM (MG/L)			DET'N LIMIT = .100		GUIDELINE = 100 (F2)			
JAN	8.600	8.400	8.000	8.000	.	.	8.200	8.400
FEB	9.800	9.400	8.400	9.200	.	.	9.200	9.200
MAY	8.400	8.000	.	.	8.400	7.800	8.200	8.100
JUN	9.200	8.400	.	.	9.200	8.800	8.600	9.000
JUL	8.600	8.800	.	.	9.200	9.000	9.200	9.000
AUG	9.000	9.400	.	.	9.200	9.400	9.200	9.200
SEP	9.800	9.800	.	.	10.000	9.000	10.400	10.600
OCT	9.640	9.820	.	.	.	.	9.620	9.550
NOV	11.800	11.500	.	.	13.100	12.100	12.200	11.900
DEC	10.200	10.200	.	.	10.400	10.400	.	.
CHLORIDE (MG/L)			DET'N LIMIT = .200		GUIDELINE = 250 (A3)			
JAN	1.200	5.100	5.300	5.100	.	.	5.400	5.400

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
			SITE 1		SITE 3		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
FEB	1.300	5.500	5.300	5.700	.	.	5.700	5.500
MAY	1.300	8.400	.	.	8.100	8.100	8.000	7.900
JUN	1.300	7.200	.	.	7.500	7.100	7.200	7.200
JUL	1.000	7.100	.	.	7.100	6.900	7.200	7.000
AUG	1.200	7.700	.	.	8.400	8.000	8.400	8.400
SEP	3.000	9.300	.	.	9.200	8.500	9.700	9.300
OCT	1.900	7.200	.	.	.	.	7.700	7.500
NOV	1.900	7.500	.	.	8.600	7.900	8.300	8.100
DEC	2.300	8.400	.	.	8.600	8.500	.	.
COLOUR (HZU)			DET'N LIMIT = .5		GUIDELINE = 5.0 (A3)			
JAN	34.500	12.500	14.000	13.000	.	.	13.500	13.000
FEB	33.000	9.500	7.000	8.000	.	.	10.500	7.500
MAY	37.500	8.000	.	.	12.500	13.000	11.000	10.500
JUN	44.000	14.000	.	.	15.500	16.500	16.000	16.000
JUL	35.000	11.000	.	.	14.000	14.000	13.000	12.500
AUG	28.000	6.500	.	.	14.000	9.500	9.500	9.000
SEP	55.500	14.500	.	.	17.500	20.500	16.500	17.000
OCT	32.500	8.500	.	.	.	.	10.500	10.500
NOV	36.500	9.000	.	.	11.000	10.500	11.000	11.000
DEC	40.000	11.000	.	.	12.000	12.000	.	.
CONDUCTIVITY (UMHO/CM)			DET'N LIMIT = 1		GUIDELINE = 400 (F2)			
JAN	63	117	116	113	.	.	112	112
FEB	64	157	138	149	.	.	156	150
MAY	60	107	.	.	111	117	106	105

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
			SITE 1		SITE 3		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
JUN	61	118	.	.	120	118	118	118
JUL	62	108	.	.	106	102	106	105
AUG	61	115	.	.	115	114	111	111
SEP	65	91	.	.	94	99	92	89
OCT	65	142	.	.	.	.	134	134
NOV	75	109	.	.	129	118	130	127
DEC	71	144	.	.	145	144	.	.
FLUORIDE (MG/L)			DET'N LIMIT = .01		GUIDELINE = 2.400 (A1)			
JAN	.040 <T	.380	.380	.360	.	.	.360	.020
FEB	.020 <T	.260	.360	.260	.	.	.440	.320
MAY	.020 <T	1.060	.	.	1.140	1.200	1.120	1.100
JUN	.020 <T	.940	.	.	.960	.960	.960	.940
JUL	.020 <T	.820	.	.	.820	.800	.820	.800
AUG	.040 <T	.750	.	.	.760	.580	.760	.680
SEP	.020 <T	1.240	.	.	1.160	1.220	1.180	1.180
OCT	.020 <T	.980	.	.	.	.	.860	.940
NOV	.020 <T	.980	.	.	.780	.900	.800	.880
DEC	.020	.820	.	.	.820	.840	.	.
HARDNESS (MG/L)			DET'N LIMIT = .500		GUIDELINE = 80-100 (A4)			
JAN	27.000	28.000	25.000	25.000	.	.	26.000	27.000
FEB	24.000	30.000	26.000	28.000	.	.	28.000	27.000
MAY	27.000	27.000	.	.	27.000	25.000	28.000	27.000
JUN	29.000	26.000	.	.	29.000	28.000	27.000	28.000
JUL	28.000	29.000	.	.	29.000	29.000	29.000	29.000

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE TYPE	WATER TREATMENT PLANT RAW	WATER TREATMENT PLANT TREATED	DISTRIBUTION SYSTEM SITE 1 STANDING	DISTRIBUTION SYSTEM SITE 1 FREE FLOW	DISTRIBUTION SYSTEM SITE 3 STANDING	DISTRIBUTION SYSTEM SITE 3 FREE FLOW	DISTRIBUTION SYSTEM SITE 2 STANDING	DISTRIBUTION SYSTEM SITE 2 FREE FLOW
AUG	29.000	30.000	.	.	29.000	29.000	29.000	23.000
SEP	31.000	31.000	.	.	31.000	29.000	32.000	32.900
OCT	30.000	30.400	.	.	.	.	29.900	29.700
NOV	36.000	35.400	.	.	39.700	36.800	37.300	36.500
DEC	32.000	32.000	.	.	33.000	33.000	.	.
IONCAL (DIMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = N/A			
JAN	2.208	6.827	1.551	3.606	.	.	2.861	6.639
FEB	6.240	4.818	1.811	.168	.	.	.961	2.249
MAY	3.438	1.525	.	.	6.120	5.126	8.675	8.726
JUN	8.085	1.784	.	.	2.778	5.775	4.052	7.448
JUL	2.635	3.518	.	.	2.877	4.012	4.033	3.154
AUG	8.321	6.925	.	.	5.531	7.067	5.464	8.332
SEP	4.614	10.050	.	.	3.472	4.313	5.175	10.890
OCT	2.165	2.087	.	.	.	.	.434	2.458
NOV	11.990	13.600	.	.	8.565	11.820	6.173	9.567
DEC	5.091	7.669	.	.	3.225	6.454	.	.
LANGELIERS INDEX (DIMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = N/A			
JAN	-1.576	-1.089	-1.302	-1.225	.	.	-1.157	-1.153
FEB	-1.280	-.624	-.774	-.597	.	.	-.680	-.674
MAY	-1.864	-1.880	.	.	-1.700	-1.449	-1.743	-1.747
JUN	-1.495	-1.327	.	.	-1.170	-1.260	-1.246	-1.226
JUL	-1.366	-1.211	.	.	-1.282	-1.385	-1.252	-1.265
AUG	-1.311	-1.107	.	.	-1.147	-1.100	-1.202	-1.243
SEP	-1.470	-2.307	.	.	-2.234	-2.162	-1.921	-1.948

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
SITE			SITE 1		SITE 3		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
OCT	-1.253	-.773	.	.	.	.	-.948	-.919
NOV	-1.033	-1.255	.	.	-.890	-1.046	-.905	-.967
DEC	-1.090	-.800	.	.	-.795	-.669	.	.
MAGNESIUM (MG/L)			DET'N LIMIT = .050		GUIDELINE = 30 (F2)			
JAN	1.400	1.700	1.300	1.300	.	.	1.500	1.500
FEB	1.400	1.600	1.100	1.100	.	.	1.200	1.100
MAY	1.400	1.600	.	.	1.400	1.300	1.500	1.500
JUN	1.400	1.300	.	.	1.400	1.400	1.300	1.400
JUL	1.600	1.600	.	.	1.500	1.500	1.600	1.600
AUG	1.500	1.500	.	.	1.500	1.400	1.400	1.500
SEP	1.600	1.600	.	.	1.500	1.400	1.500	1.600
OCT	1.440	1.430	.	.	.	.	1.420	1.440
NOV	1.600	1.600	.	.	1.700	1.600	1.650	1.650
DEC	1.500	1.700	.	.	1.700	1.800	.	.
SODIUM (MG/L)			DET'N LIMIT = .200		GUIDELINE = 200 (C3)			
JAN	1.600	14.400	12.600	12.600	.	.	13.200	13.600
FEB	1.200	23.000	19.800	21.200	.	.	22.400	21.600
MAY	1.400	11.400	.	.	12.400	14.600	11.200	11.400
JUN	1.600	13.200	.	.	13.400	13.800	13.600	13.800
JUL	1.000	10.400	.	.	9.600	8.800	9.400	9.200
AUG	1.800	12.600	.	.	12.600	12.800	11.800	12.200
SEP	1.800	4.200	.	.	4.400	7.400	4.200	4.200
OCT	1.300	17.600	.	.	.	.	15.800	16.300
NOV	2.220	9.000	.	.	13.200	11.200	13.400	13.500

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 3		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
DEC	2.200	18.200	.	.	17.800	18.200	.	.
AMMONIUM TOTAL (MG/L)			DET'N LIMIT = 0.002		GUIDELINE = .05 (F2)			
JAN	.032	.010	.312	.020	.	.	.014	.012
FEB	BDL	.004 <T	.026	.018	.	.	.176	.016
MAY	.030	BDL	.	.	.002 <T	.002 <T	.006 <T	.004 <T
JUN	.016	.004 <T	.	.	.004 <T	BDL	.008 <T	.008 <T
JUL	.024	.016	.	.	.014	.012	.010	.010
AUG	BDL	.006 <T	.	.	.034	.020	BDL	BDL
SEP	.002 <T	.012	.	.	.018	BDL	.002 <T	BDL
OCT	.004 <T	.002 <T	.	.	.	.	BDL	BDL
NOV	.010	.002 <T	.	.	.030	.006 <T	BDL	.006 <T
DEC	.028	.004 <T	.	.	.004 <T	BDL	.	.
NITRITE (MG/L)			DET'N LIMIT = 0.001		GUIDELINE = 1.000 (A1)			
JAN	.004 <T	.003 <T	.004 <T	.003 <T	.	.	.004 <T	.004 <T
FEB	.002 <T	.002 <T	.002 <T	.002 <T	.	.	.003 <T	.004 <T
MAY	.005	.003 <T	.	.	.004 <T	.004 <T	.003 <T	.003 <T
JUN	.005	.003 <T	.	.	.006	.005	.004 <T	.005
JUL	.006	.004 <T	.	.	.006	.006	.005	.006
AUG	.001 <T	.002 <T	.	.	.002 <T	.002 <T	.003 <T	.002 <T
SEP	.003 <T	.002 <T	.	.	.002 <T	.004 <T	.004 <T	.003 <T
OCT	.005	.003 <T	.	.	.	.	.004 <T	.003 <T
NOV	.004 <T	.002 <T	.	.	.005	.003 <T	.003 <T	.002 <T
DEC	.004 <T	.002 <T	.	.	.005	.002 <T	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
			SITE 1		SITE 3		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
TOTAL NITRATES (MG/L)			DET'N LIMIT = .020		GUIDELINE = 10.000 (A1)			
JAN	.085 <T	.085	.450	.100	.	.	.090	.090
FEB	.090	.100	.085	.100	.	.	.330	.115
MAY	BDL	.055	.	.	.040	.035	.060	.050
JUN	.020 <T	.060	.	.	.065	.060	.050	.045
JUL	BDL	.050	.	.	.060	.055	.060	.055
AUG	.020 <T	.050	.	.	.060	.035	.035	.030
SEP	BDL	.055	.	.	.125	.050	.060	.060
OCT	.005 <T	.065	.	.	.	.	.065	.070
NOV	.015 <T	.080	.	.	.120	.085	.090	.080
DEC	.025	.070	.	.	.100	.065	.	.
NITROGEN TOT KJELD (MG/L)			DET'N LIMIT = .020		GUIDELINE = N/A			
JAN	.375	.320	.770	.330	.	.	.340	.330
FEB	.525	.350	.380	.350	.	.	.560	.320
MAY	ISM	.300	.	.	.330	.340	.360	.300
JUN	.450	.400	.	.	.370	.370	.410	.390
JUL	.390	.310	.	.	.340	.340	.350	.330
AUG	.370	.290	.	.	.340	.310	.320	.300
SEP	BDL	.380	.	.	.420	.360	.360	.350
OCT	.380	.300	.	.	.	.	.320	.300
NOV	.430	.370	.	.	.440	.360	.360	.470
DEC	.410	.350	.	.	.400	.400	.	.
PH (DMNSLESS)			DET'N LIMIT = N/A		GUIDELINE = 6.5-8.5(A4)			
JAN	7.430	7.730	7.560	7.620	.	.	7.690	7.690

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 3		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
FEB	7.660	8.000	7.950	8.060	.	.	7.960	7.980
MAY	7.180	7.100	.	.	7.270	7.510	7.270	7.270
JUN	7.490	7.560	.	.	7.660	7.600	7.630	7.630
JUL	7.630	7.700	.	.	7.620	7.560	7.660	7.660
AUG	7.680	7.750	.	.	7.730	7.760	7.700	7.660
SEP	7.460	6.870	.	.	6.890	6.910	7.190	7.170
OCT	7.690	7.930	.	.	.	.	7.800	7.830
NOV	7.770	7.610	.	.	7.760	7.720	7.780	7.750
DEC	7.800	7.860	.	.	7.840	7.970	.	.
PHOSPHORUS FIL REACT (MG/L)			DET'N LIMIT = .0005		GUIDELINE = N/A			
JAN	.001 <T	BDL	.	.	.	.	.	.
FEB	.000 <T	.005	.	.	.	.	.	.
MAY	.001 <T	.006	.	.	.	.	.	.
JUN	BDL	.005	.	.	.	.	.	.
JUL	.001 <T	.007	.	.	.	.	.	.
AUG	BDL	.002 <T	.	.	.	.	.	.
SEP	BDL	.008	.	.	.	.	.	.
OCT	.002	.002	.	.	.	.	.	.
NOV	BDL	.001 <T	.	.	.	.	.	.
DEC	BDL	.004	.	.	.	.	.	.
PHOSPHORUS TOTAL (MG/L)			DET'N LIMIT = .002		GUIDELINE = .40 (F2)			
JAN	BDL	.006 <T	.	.	.	.	.	.
FEB	.025	.011	.	.	.	.	.	.
MAY	ISM	.017	.	.	.	.	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
SITE TYPE	RAW	TREATED	SITE 1		SITE 3		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
JUN	.009 <T	.016	.	.	.	.	.	.
JUL	.007 <T	.016	.	.	.	.	.	.
AUG	.005 <T	.008 <T	.	.	.	.	.	.
SEP	BDL	.017	.	.	.	.	.	.
OCT	.007 <T	.009 <T	.	.	.	.	.	.
NOV	.007 <T	.009 <T	.	.	.	.	.	.
DEC	.008 <T	.011	.	.	.	.	.	.
SULPHATE (MG/L)			DET'N LIMIT = .200		GUIDELINE = 500. (A3)			
JAN	2.940	5.890	5.570	5.720	.	.	5.690	5.660
FEB	2.920	6.900	6.190	7.660	.	.	6.910	6.640
MAY	3.420	8.210	.	.	9.270	9.200	8.030	8.240
JUN	3.210	7.600	.	.	7.790	7.650	7.680	7.700
JUL	2.320 <T	7.000	.	.	6.950	6.960	6.930	7.030
AUG	3.340	7.800	.	.	7.900	7.730	7.870	7.810
SEP	2.780	7.630	.	.	8.630	8.580	8.210	8.170
OCT	3.290	8.530	.	.	.	.	8.690	8.470
NOV	4.010	9.730	.	.	10.030	9.940	10.270	10.190
DEC	3.360	3.480	.	.	3.610	3.550	.	.
TURBIDITY (FTU)			DET'N LIMIT = .02		GUIDELINE = 1.00 (A)			
JAN	2.100	1.150 RRV	1.130 RRV	1.320 RRV	.	.	2.100 RRV	2.100 RRV
FEB	6.300	.760	.830	.710	.	.	.950	.590
MAY	1.130 RRV	.810	.	.	1.150 RRV	.980	1.300 RRV	1.300 RRV
JUN	1.490	.950	.	.	.800	1.200 RRV	1.300 RRV	.900
JUL	.850	.850	.	.	1.200 RRV	1.450 RRV	1.300 RRV	.980

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 3		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
AUG	1.350	.820	.	.	1.090 RRV	1.050 RRV	1.230 RRV	1.100 RRV
SEP	1.530	2.300	.	.	3.600	1.370	1.880	1.360
OCT	1.080	.970	.	.	.	.	1.120	1.000
NOV	1.240	1.010	.	.	1.750	1.450	1.690	2.200
DEC	1.500	.830	.	.	1.100 RRV	1.100 RRV	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 3		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
METALS								
SILVER (UG/L)				DET'N LIMIT = .020 GUIDELINE = 50. (A1)				
JAN	.040 <T	BDL	BDL	BDL	.	.	BDL	BDL
FEB	BDL	BDL	BDL	BDL	.	.	BDL	BDL
MAY	BDL	BDL	.	.	BDL	BDL	BDL	BDL
JUN	BDL	BDL	.	.	BDL	BDL	BDL	BDL
JUL	BDL	BDL	.	.	.040 <T	BDL	BDL	BDL
AUG	BDL	BDL	.	.	.050 <T	BDL	BDL	BDL
SEP	BDL	BDL	.	.	BDL	BDL	ISM	BDL
OCT	BDL	BDL	.	.	.	.	BDL	BDL
NOV	BDL	BDL	.	.	BDL	BDL	BDL	BDL
DEC	BDL	BDL	.	.	BDL	BDL	.	.
ALUMINUM (UG/L)				DET'N LIMIT = .050 GUIDELINE = 100.(A4)				
JAN	103.240	638.000	614.800	580.000	.	.	603.200	603.200
FEB	54.520	638.000	324.800	464.000	.	.	475.600	498.800
MAY	35.000	970.000	.	.	860.000	890.000	890.000	900.000
JUN	53.000	860.000	.	.	800.000	820.000	840.000	850.000
JUL	15.000	900.000	.	.	890.000	910.000	900.000	680.000
AUG	63.000	680.000	.	.	680.000	660.000	680.000	680.000
SEP	32.000	950.000	.	.	862.000	864.000	ISM	850.000
OCT	24.000	840.000	.	.	.	.	770.000	790.000
NOV	26.000	940.000	.	.	870.000	930.000	920.000	940.000
DEC	30.000	75.000	.	.	110.000	90.000	.	.
ARSENIC (UG/L)				DET'N LIMIT = 0.050 GUIDELINE = 50.0 (A1)				
JAN	1.200	1.000 <T	.880 <T	1.300	.	.	.940 <T	1.000 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
SITE			SITE 1		SITE 3		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
FEB	1.700	1.500	1.100	1.600	.	.	1.500	1.700
MAY	1.300	2.300	.	.	.990 <T	1.300	2.300	2.400
JUN	2.300	2.100	.	.	1.900	1.700	2.100	2.100
JUL	2.400	2.700	.	.	2.300	2.300	2.400	1.800
AUG	1.900	1.900	.	.	1.700	1.700	1.600	1.800
SEP	1.400	1.700	.	.	1.430	1.500	ISM	1.300
OCT	1.300	.860 <T	.	.	.	.	1.100	1.300
NOV	1.000 <T	1.300	.	.	1.100	1.400	1.200	1.300
DEC	1.200	1.200	.	.	1.200	1.100	.	.
BARIUM (UG/L)			DET'N LIMIT = 0.020 GUIDELINE = 1000. (A1)					
JAN	7.200	6.100	5.500	5.400	.	.	5.100	5.300
FEB	6.300	6.000	3.300	3.600	.	.	3.700	3.800
MAY	6.100	6.500	.	.	7.800	6.600	7.700	7.200
JUN	6.800	5.800	.	.	5.900	5.700	5.700	5.700
JUL	5.700	5.800	.	.	6.100	6.000	5.800	4.800
AUG	4.500	4.300	.	.	4.000	3.600	4.200	4.000
SEP	5.400	5.500	.	.	6.800	5.200	ISM	6.500
OCT	4.900	5.000	.	.	.	.	3.600	3.500
NOV	6.000	5.700	.	.	7.400	6.100	5.600	5.500
DEC	6.200	5.400	.	.	4.700	4.300	.	.
BORON (UG/L)			DET'N LIMIT = 0.200 GUIDELINE = 5000. (A1)					
JAN	7.500 <T	11.000 <T	45.000	41.000	.	.	9.700 <T	10.000 <T
FEB	27.000	43.000	15.000 <T	7.100 <T	.	.	19.000 <T	31.000
MAY	8.300 <T	8.100 <T	.	.	12.000 <T	12.000 <T	8.900 <T	8.000 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 3		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
JUN	8.700 <T	9.500 <T	.	.	5.200 <T	6.800 <T	15.000 <T	8.800 <T
JUL	8.200 <T	8.700 <T	.	.	7.500 <T	7.600 <T	8.400 <T	4.900 <T
AUG	9.300 <T	13.000 <T	.	.	12.000 <T	13.000 <T	11.000 <T	12.000 <T
SEP	8.100 <T	9.200 <T	.	.	6.300 <T	5.400 <T	ISM	5.700 <T
OCT	6.300 <T	4.400 <T	.	.	.	.	6.800 <T	5.300 <T
NOV	5.000 <T	4.500 <T	.	.	4.600 <T	4.300 <T	5.600 <T	6.000 <T
DEC	4.800 <T	4.600 <T	.	.	4.800 <T	4.800 <T	.	.
BERYLLIUM (UG/L)			DET'N LIMIT = 0.010 GUIDELINE = N/A					
JAN	BDL	BDL	.020 <T	.080 <T	.	.	BDL	BDL
FEB	.160 <T	BDL	.020 <T	BDL	.	.	.040 <T	.040 <T
MAY	BDL	BDL	.	.	BDL	BDL	BDL	BDL
JUN	.030 <T	.020 <T	.	.	.020 <T	.040 <T	BDL	.040 <T
JUL	.020 <T	.030 <T	.	.	BDL	.030 <T	.040 <T	BDL
AUG	BDL	BDL	.	.	.060 <T	.020 <T	.050 <T	BDL
SEP	BDL	BDL	.	.	BDL	BDL	ISM	BDL
OCT	.050 <T	BDL	.	.	.	.	BDL	BDL
NOV	BDL	BDL	.	.	BDL	.020 <T	BDL	BDL
DEC	BDL	BDL	.	.	BDL	BDL	.	.
CADMIUM (UG/L)			DET'N LIMIT = 0.050 GUIDELINE = 5.000 (A1)					
JAN	.290 <T	BDL	.090 <T	.080 <T	.	.	BDL	BDL
FEB	BDL	BDL	BDL	BDL	.	.	.080 <T	BDL
MAY	BDL	BDL	.	.	BDL	.110 <T	BDL	BDL
JUN	BDL	.070 <T	.	.	.060 <T	BDL	.210 <T	BDL
JUL	BDL	BDL	.	.	BDL	.090 <T	.690	.060 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 3		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
AUG	BDL	BDL	.	.	BDL	BDL	.090 <T	BDL
SEP	BDL	BDL	.	.	BDL	BDL	ISM	BDL
OCT	BDL	BDL	.	.	.	.	BDL	BDL
NOV	BDL	BDL	.	.	BDL	BDL	BDL	BDL
DEC	BDL	BDL	.	.	BDL	BDL	.	.
COBALT (UG/L)	DET'N LIMIT = 0.020 GUIDELINE = N/A							
JAN	.260 <T	.160 <T	.080 <T	.130 <T	.	.	.100 <T	.090 <T
FEB	.240 <T	.200 <T	.170 <T	.210 <T	.	.	.200 <T	.210 <T
MAY	.200 <T	.220 <T	.	.	.220 <T	.180 <T	.180 <T	.210 <T
JUN	.330 <T	.250 <T	.	.	.260 <T	.230 <T	.250 <T	.210 <T
JUL	.190 <T	.110 <T	.	.	.110 <T	.120 <T	.110 <T	.200 <T
AUG	.150 <T	.130 <T	.	.	.160 <T	.140 <T	.120 <T	.140 <T
SEP	.040 <T	.060 <T	.	.	.100 <T	.070 <T	ISM	.050 <T
OCT	.090 <T	.100 <T	.	.	.	.	.100 <T	.160 <T
NOV	.390 <T	.150 <T	.	.	.220 <T	.140 <T	.110 <T	.080 <T
DEC	.270 <T	.180 <T	.	.	.150 <T	.150 <T	.	.
CHROMIUM (UG/L)	DET'N LIMIT = 0.100 GUIDELINE = 50. (A1)							
JAN	BDL	1.900	1.400	.910 <T	.	.	1.300	1.400
FEB	2.300	3.400	1.100	BDL	.	.	1.400	3.100
MAY	2.300	1.300	.	.	3.300	3.700	1.400	1.300
JUN	1.200	1.800	.	.	BDL	.670 <T	1.800	1.300
JUL	1.300	2.000	.	.	1.600	1.600	1.900	BDL
AUG	1.100	2.200	.	.	2.200	2.100	1.800	1.900
SEP	1.200	1.500	.	.	.750 <T	.110 <T	ISM	.350 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
SITE TYPE	RAW	TREATED	SITE 1		SITE 3		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
OCT	.930 <T	.450 <T	.	.	.	.	.720 <T	.760 <T
NOV	BDL	BDL	.	.	BDL	BDL	.170 <T	.240 <T
DEC	BDL	BDL	.	.	BDL	BDL	.	.
COPPER (UG/L)			DET'N LIMIT = .100 GUIDELINE = 1000 (A3)					
JAN	6.000	1.800	160.000	300.000	.	.	190.000	42.000
FEB	5.700	1.300	730.000	97.000	.	.	73.000	14.000
MAY	6.000	4.400	.	.	680.000	310.000	340.000	62.000
JUN	5.800	3.800	.	.	650.000	180.000	140.000	52.000
JUL	4.800	3.800	.	.	630.000	230.000	120.000	34.000
AUG	5.200	2.600	.	.	680.000	200.000	260.000	72.000
SEP	7.300	5.100	.	.	1350.000 RRV	442.000	ISM	150.000
OCT	1.500	2.200	.	.	.	.	220.000	46.000
NOV	3.800	1.700	.	.	930.000	100.000	430.000	190.000
DEC	4.000 <T	1.400 <T	.	.	460.000	65.000	.	.
IRON (UG/L)			DET'N LIMIT = 4.000 GUIDELINE = 300. (A3)					
JAN	290.000	180.000	230.000	230.000	.	.	220.000	200.000
FEB	240.000	160.000	140.000	170.000	.	.	180.000	180.000
MAY	140.000	150.000	.	.	200.000	200.000	230.000	240.000
JUN	230.000	140.000	.	.	200.000	220.000	200.000	200.000
JUL	200.000	180.000	.	.	240.000	240.000	220.000	78.000
AUG	120.000	90.000	.	.	150.000	120.000	140.000	120.000
SEP	190.000	160.000	.	.	318.000	296.000	ISM	290.000
OCT	130.000	150.000	.	.	.	.	150.000	140.000
NOV	160.000	130.000	.	.	160.000	160.000	160.000	160.000

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
			SITE 1		SITE 3		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
DEC	240.000	170.000	.	.	180.000	180.000	.	.
MERCURY (UG/L)			DET'N LIMIT = 0.010 GUIDELINE = 1.000 (A1)					
JAN	BDL	.100	.	BDL	.	.	.	.060
FEB	.040 <T	BDL	.	.100	.	.	.	BDL
MAY	.060	.050 <T	.	.	.	.020 <T	.	.290
JUN	.060	.050 <T	.	.	.	.090	.	.170
JUL	.060	.060	.	.	.	.060	.	.200
AUG	.050 <T	.070	.	.	.	.060	.	.090
SEP	.080	.090	.	.	.	.070	.	.200
OCT	.080	.090	.	.	.	.	.	BDL
NOV	.110	.070	.	.	.	.110	.	BDL
DEC	.090	.130	.	.	.	.110	.	.
MANGANESE (UG/L)			DET'N LIMIT = .050 GUIDELINE = 50.0 (A3)					
JAN	46.000	20.000	11.000	10.000	.	.	13.000	12.000
FEB	42.000	18.000	9.100	11.000	.	.	12.000	12.000
MAY	16.000	17.000	.	.	14.000	12.000	15.000	14.000
JUN	37.000	5.700	.	.	12.000	12.000	6.500	6.200
JUL	14.000	4.700	.	.	8.100	7.400	5.500	2.200
AUG	20.000	3.000	.	.	7.800	5.800	7.100	5.200
SEP	11.000	4.600	.	.	10.500	9.100	ISM	8.300
OCT	12.000	4.500	.	.	.	.	4.500	4.000
NOV	12.000	10.000	.	.	15.000	8.400	7.600	6.800
DEC	26.000	21.000	.	.	14.000	13.000	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 3		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
MOLYBDENUM (UG/L)			DET'N LIMIT = 0.020 GUIDELINE = N/A					
JAN	.100 <T	.180 <T	.180 <T	.140 <T	.	.	.140 <T	.130 <T
FEB	.200 <T	.320 <T	.350 <T	.410 <T	.	.	.370 <T	.360 <T
MAY	.270 <T	.250 <T	.	.	.380 <T	.440 <T	.160 <T	.190 <T
JUN	.120 <T	.320 <T	.	.	.310 <T	.300 <T	.360 <T	.380 <T
JUL	.220 <T	.340 <T	.	.	.270 <T	.280 <T	.310 <T	.350 <T
AUG	.050 <T	.320 <T	.	.	.350 <T	.320 <T	.300 <T	.350 <T
SEP	.090 <T	.140 <T	.	.	.120 <T	.110 <T	ISM	.080 <T
OCT	.090 <T	.040 <T	.	.	.	.	.110 <T	.090 <T
NOV	.040 <T	.140 <T	.	.	.100 <T	.140 <T	.100 <T	.110 <T
DEC	.110 <T	.170 <T	.	.	.150 <T	.170 <T	.	.
NICKEL (UG/L)			DET'N LIMIT = 0.100 GUIDELINE = 50. (F3)					
JAN	.210 <T	BDL	2.700	BDL	.	.	1.400 <T	BDL
FEB	.590 <T	.160 <T	.470 <T	.480 <T	.	.	.920 <T	.570 <T
MAY	.470 <T	.820 <T	.	.	.610 <T	.570 <T	2.500	3.500
JUN	2.500	1.900 <T	.	.	4.100	2.000 <T	2.500	2.000 <T
JUL	.290 <T	.680 <T	.	.	2.600	.490 <T	1.600 <T	BDL
AUG	.180 <T	.880 <T	.	.	.680 <T	.700 <T	1.100 <T	.650 <T
SEP	.200 <T	.610 <T	.	.	.890 <T	.420 <T	ISM	.240 <T
OCT	.210 <T	.220 <T	.	.	.	.	1.500 <T	.380 <T
NOV	.590 <T	.170 <T	.	.	.230 <T	.350 <T	.680 <T	BDL
DEC	BDL	.260 <T	.	.	BDL	BDL	.	.
LEAD (UG/L)			DET'N LIMIT = 0.050 GUIDELINE = 50. (A1)					
JAN	.650	.120 <T	3.600	1.200	.	.	5.900	.870

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 3		SITE 2	
TYPE			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
FEB	.680	.230	5.500	.850	.	.	4.200	.730
MAY	.450	.630	.	.	2.000	.720	7.500	1.500
JUN	.730	.460	.	.	2.200	.710	5.300	1.600
JUL	.540	.670	.	.	2.800	.660	7.900	1.400
AUG	.500	.370	.	.	2.500	.680	2.500	.650
SEP	.430	.540	.	.	2.800	.700	ISM	2.300
OCT	.240	.100 <T	.	.	.	.	4.600	.990
NOV	.250	.140 <T	.	.	2.600	.220	9.900	1.600
DEC	.170 <T	BDL	.	.	1.400	.170 <T	.	.
ANTIMONY (UG/L)			DET'N LIMIT = .050 GUIDELINE = 146. (D4)					
JAN	.490	.420	.180 <T	.530	.	.	.510	.530
FEB	.530	.510	.510	.740	.	.	.660	.700
MAY	.360	.490	.	.	.620	.510	.740	.800
JUN	.490	.640	.	.	.760	.660	.640	.600
JUL	.690	.560	.	.	.700	.620	.600	1.500
AUG	.570	.620	.	.	.630	.500	.720	.630
SEP	.460	.380	.	.	.420	.460	ISM	.430
OCT	.140 <T	.190 <T	.	.	.	.	.480	.360
NOV	.480	.470	.	.	.550	.410	.460	.310
DEC	.420 <T	.270 <T	.	.	.380 <T	.320 <T	.	.
SELENIUM (UG/L)			DET'N LIMIT = 0.200 GUIDELINE = 10. (A1)					
JAN	.520 <T	.900 <T	.520 <T	.790 <T	.	.	.860 <T	1.000 <T
FEB	1.100 <T	.420 <T	2.500 <T	BDL	.	.	BDL	1.300 <T
MAY	BDL	.540 <T	.	.	BDL	BDL	1.800 <T	.660 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
			SITE 1		SITE 3		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
JUN	BDL	BDL	.	.	BDL	BDL	BDL	BDL
JUL	BDL	BDL	.	.	BDL	BDL	BDL	BDL
AUG	BDL	BDL	.	.	BDL	BDL	BDL	BDL
SEP	BDL	BDL	.	.	BDL	BDL	ISM	BDL
OCT	BDL	BDL	.	.	.	.	BDL	BDL
NOV	BDL	BDL	.	.	BDL	BDL	BDL	BDL
DEC	BDL	BDL	.	.	BDL	BDL	.	.
STRONTIUM (UG/L)				DET'N LIMIT = .050 GUIDELINE = N/A				
JAN	23.000	24.000	22.000	22.000	.	.	22.000	21.000
FEB	23.000	23.000	17.000	21.000	.	.	21.000	21.000
MAY	24.000	24.000	.	.	24.000	21.000	23.000	23.000
JUN	27.000	23.000	.	.	23.000	21.000	22.000	22.000
JUL	29.000	27.000	.	.	26.000	26.000	25.000	34.000
AUG	22.000	23.000	.	.	22.000	21.000	22.000	21.000
SEP	25.000	26.000	.	.	27.000	24.000	ISM	27.000
OCT	26.000	24.000	.	.	.	.	23.000	23.000
NOV	25.000	24.000	.	.	30.000	27.000	26.000	25.000
DEC	26.000	23.000	.	.	24.000	24.000	.	.
TITANIUM (UG/L)				DET'N LIMIT = .050 GUIDELINE = N/A				
JAN	3.600	11.000	3.400	3.600	.	.	10.000	10.000
FEB	5.200	3.900	4.300	4.900	.	.	5.000	5.400
MAY	6.000	8.200	.	.	7.500	7.400	8.200	8.100
JUN	9.100	8.800	.	.	8.900	9.000	8.700	8.500
JUL	2.900	3.400	.	.	3.400	3.600	3.700	3.300

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
			SITE 1		SITE 3		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
AUG	7.200	7.600	.	.	7.000	7.400	6.600	7.300
SEP	7.500	9.000	.	.	5.760	5.200	ISM	8.300
OCT	6.900	6.400	.	.	.	.	7.700	7.800
NOV	4.300	4.700	.	.	4.900	4.500	5.600	5.200
DEC	4.100 <T	4.100 <T	.	.	4.400 <T	4.300 <T	.	.
THALLIUM (UG/L)			DET'N LIMIT = .010 GUIDELINE = 13. (D4)					
JAN	.030 <T	BDL	BDL	BDL	.	.	BDL	BDL
FEB	.100 <T	BDL	BDL	BDL	.	.	BDL	.020 <T
MAY	BDL	BDL	.	.	BDL	BDL	BDL	BDL
JUN	BDL	BDL	.	.	.020 <T	.030 <T	.040 <T	BDL
JUL	.020 <T	.030 <T	.	.	BDL	.040 <T	BDL	.050 <T
AUG	BDL	.020 <T	.	.	BDL	BDL	BDL	BDL
SEP	BDL	BDL	.	.	BDL	BDL	ISM	BDL
OCT	BDL	BDL	.	.	.	.	BDL	BDL
NOV	BDL	BDL	.	.	BDL	BDL	BDL	BDL
DEC	BDL	BDL	.	.	BDL	BDL	.	.
URANIUM (UG/L)			DET'N LIMIT = .020 GUIDELINE = 100.(B1)					
JAN	.050 <T	.030 <T	BDL	.030 <T	.	.	BDL	.030 <T
FEB	.060 <T	.040 <T	.030 <T	.070 <T	.	.	.040 <T	.110 <T
MAY	BDL	.060 <T	.	.	BDL	.070 <T	.050 <T	.040 <T
JUN	BDL	.090 <T	.	.	.110 <T	.100 <T	.080 <T	.100 <T
JUL	BDL	.060 <T	.	.	.060 <T	.080 <T	.080 <T	.080 <T
AUG	.050 <T	BDL	.	.	.030 <T	.040 <T	.040 <T	.050 <T
SEP	BDL	BDL	.	.	.030 <T	BDL	ISM	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
			SITE 1		SITE 3		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
OCT	BDL	BDL	.	.	.	.	BDL	BDL
NOV	BDL	.040 <T	.	.	.030 <T	BDL	.040 <T	.030 <T
DEC	BDL	.060 <T	.	.	BDL	.060 <T	.	.
VANADIUM (UG/L)			DET'N LIMIT = .050	GUIDELINE = N/A				
JAN	.260 <T	.240 <T	.060 <T	.050 <T	.	.	.200 <T	.150 <T
FEB	.260 <T	.220 <T	.170 <T	.200 <T	.	.	.210 <T	.230 <T
MAY	.250 <T	.370 <T	.	.	.180 <T	.250 <T	.260 <T	.270 <T
JUN	.360 <T	.530	.	.	.470 <T	.510	.500 <T	.520
JUL	.230 <T	.240 <T	.	.	.240 <T	.230 <T	.260 <T	.170 <T
AUG	.230 <T	.230 <T	.	.	.210 <T	.220 <T	.230 <T	.220 <T
SEP	.200 <T	.200 <T	.	.	.140 <T	.150 <T	ISM	.150 <T
OCT	.150 <T	.150 <T	.	.	.	.	.130 <T	.120 <T
NOV	.190 <T	.190 <T	.	.	.200 <T	.190 <T	.160 <T	.150 <T
DEC	.320 <T	.290 <T	.	.	.300 <T	.320 <T	.	.
ZINC (UG/L)			DET'N LIMIT = .001	GUIDELINE = 5000. (A3)				
JAN	3.700	1.600	27.000	7.300	.	.	18.000	3.500
FEB	2.000	1.000 <T	13.000	4.100	.	.	11.000	3.000
MAY	2.200	5.000	.	.	47.000	12.000	29.000	6.900
JUN	2.000	3.200	.	.	44.000	12.000	18.000	5.600
JUL	1.200	2.700	.	.	46.000	7.900	14.000	1.800
AUG	1.600	2.800	.	.	41.000	7.000	16.000	4.600
SEP	.970 <T	3.300	.	.	64.000	9.300	ISM	5.700
OCT	1.600	.960 <T	.	.	.	.	21.000	4.100
NOV	.840 <T	1.800	.	.	40.000	5.300	27.000	11.000

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 3		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
DEC	1.100 <T	1.200 <T	.	.	25.000	2.200	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
			SITE 1		SITE 3		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
PESTICIDES & PCB								
ALPHA BHC (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 700 (G)			
JAN	IIS	BDL	.	1.000 <T	.	.	.	1.000 <T
FEB	1.000 <T	1.000 <T	.	1.000 <T	.	.	.	1.000 <T
MAY	BDL	IDI	.	.	.	BDL	.	BDL
JUN	BDL	BDL	.	.	.	BDL	.	BDL
JUL	1.000 <T	3.000 <T	.	.	.	BDL	.	BDL
AUG	BDL	BDL	.	.	.	1.000 <T	.	2.000 <T
SEP	BDL	BDL	.	.	.	1.000 <T	.	BDL
OCT	1.000 <T	1.000 <T	.	.	.	.	.	BDL
NOV	1.000 <T	1.000 <T	.	.	.	BDL	.	1.000 <T
DEC	BDL	1.000 <T	.	.	.	1.000 <T	.	.
LINDANE (NG/L)			DET'N LIMIT = 1.000		GUIDELINE = 4000 (A1)			
JAN	IIS	BDL	.	BDL	.	.	.	BDL
FEB	BDL	BDL	.	BDL	.	.	.	1.000 <T
MAY	BDL	IDI	.	.	.	BDL	.	BDL
JUN	BDL	BDL	.	.	.	4.000 <T	.	4.000 <T
JUL	3.000 <T	5.000 <T	.	.	.	3.000 <T	.	4.000 <T
AUG	BDL	3.000 <T	.	.	.	2.000 <T	.	2.000 <T
SEP	1.000 <T	1.000 <T	.	.	.	1.000 <T	.	2.000 <T
OCT	1.000 <T	1.000 <T	.	.	.	.	.	BDL
NOV	BDL	1.000 <T	.	.	.	BDL	.	BDL
DEC	BDL	1.000 <T	.	.	.	1.000 <T	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
SITE			SITE 1		SITE 3		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
PHENOLICS (UG/L)	PHENOLICS		DET'N LIMIT = 0.2		GUIDELINE = 2.00 (A3)			
JAN	2.600	3.000	.	.	.	.	.	.
FEB	2.200	.	.	.	.	.	.	.
MAY	1.800	2.600	.	.	.	.	.	.
JUN	2.200	2.200	.	.	.	.	.	.
JUL	1.200	1.000	.	.	.	.	.	.
AUG	3.200	1.000 <T	.	.	.	.	.	.
SEP	3.200	3.600	.	.	.	.	.	.
OCT	5.400	5.000	.	.	.	.	.	.
NOV	INR	INR	.	.	.	.	.	.
DEC	.600 <T	1.000	.	.	.	.	.	.

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
			SITE 1		SITE 3		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
VOLATILES								
TOLUENE (UG/L)				DET'N LIMIT = .050 GUIDELINE = 24.0 (84)				
MAY	BDL	.200 <T	.	.	.	.300 <T	.	.200 <T
JUN	BDL	.150 <T	.	.	.	IU	.	.150 <T
JUL	.050 <T	.200 <T	.	.	.	.150 <T	.	.200 <T
AUG	BDL	.150 <T	.	.	.	.200 <T	.	.150 <T
SEP	BDL	.050 <T	.	.	.	BDL	.	.050 <T
OCT	BDL	.050 <T	.	.	.	.	.	BDL
NOV	.	.100 <T	.	.	.	.	.	.450 <T
ETHYLBENZENE (UG/L)				DET'N LIMIT = .050 GUIDELINE = 2.4 (84)				
MAY	BDL	.050 <T	.	.	.	.100 <T	.	.050 <T
JUN	BDL	BDL	.	.	.	IU	.	BDL
JUL	BDL	.050 <T	.	.	.	BDL	.	.050 <T
AUG	BDL	BDL	.	.	.	BDL	.	BDL
SEP	BDL	BDL	.	.	.	BDL	.	BDL
OCT	BDL	BDL	.	.	.	.	.	BDL
NOV	.	BDL	.	.	.	.	.	.200 <T
M-XYLENE (UG/L)				DET'N LIMIT = .100 GUIDELINE = 300 (84)				
MAY	BDL	BDL	.	.	.	BDL	.	BDL
JUN	BDL	BDL	.	.	.	IU	.	BDL
JUL	BDL	BDL	.	.	.	BDL	.	BDL
AUG	BDL	BDL	.	.	.	BDL	.	BDL
SEP	BDL	BDL	.	.	.	BDL	.	BDL
OCT	BDL	BDL	.	.	.	.	.	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
			SITE 1		SITE 3		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
NOV	.	BDL	.	.	.	.	.	.300 <T
STYRENE (UG/L)			DET'N LIMIT = .050 GUIDELINE = 46.5 (D2)					
MAY	BDL	.100 <T	.	.	.	.350 <T	.	.250 <T
JUN	BDL	.150 <T	.	.	.	IU	.	.200 <T
JUL	.100 <T	.150 <T	.	.	.	.400 <T	.	.250 <T
AUG	BDL	.050 <T	.	.	.	.150 <T	.	.100 <T
SEP	.100 <T	BDL	.	.	.	.150 <T	.	.050 <T
OCT	BDL	BDL	.	.	.	.	.	.100 <T
NOV	.	BDL	.	.	.	.	.	1.900
CHLOROFORM (UG/L)			DET'N LIMIT = .100 GUIDELINE = 350 (A1+)					
MAY	.600 <T	200.000	.	.	.	175.000	.	183.000
JUN	BDL	245.000	.	.	.	IU	.	195.000
JUL	.300 <T	255.000	.	.	.	210.000	.	200.000
AUG	.100 <T	200.000	.	.	.	172.000	.	182.000
SEP	.300 <T	205.000	.	.	.	180.000	.	144.000
OCT	BDL	150.000	.	.	.	.	.	124.200
NOV	.	126.400	.	.	.	.	.	55.400
111, TRICHLOROETHANE (UG/L)			DET'N LIMIT = .020 GUIDELINE = 200 (D1)					
MAY	.040 <T	BDL	.	.	.	BDL	.	BDL
JUN	BDL	BDL	.	.	.	IU	.	BDL
JUL	BDL	BDL	.	.	.	BDL	.	BDL
AUG	BDL	.080 <T	.	.	.	.080 <T	.	.100 <T

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE TYPE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
	RAW	TREATED	SITE 1		SITE 3		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
SEP	.020 <T	BDL	.	.	.	BDL	.	BDL
OCT	BDL	BDL	.	.	.	.	.	BDL
NOV	.	BDL	.	.	.	.	.	BDL
DICHLOROBROMOMETHANE (UG/L)			DET'N LIMIT = .050 GUIDELINE = 350 (A1+)					
MAY	.150 <T	3.600	.	.	.	3.400	.	3.050
JUN	BDL	3.800 SPS	.	.	.	IU	.	3.250
JUL	.100 <T	4.600	.	.	.	3.750	.	3.850
AUG	BDL	3.800	.	.	.	3.400	.	3.500
SEP	BDL	2.550 SPS	.	.	.	2.250	.	1.900
OCT	BDL	3.000	.	.	.	.	.	2.150
NOV	.	2.350	.	.	.	.	.	1.450
CHLORODIBROMOMETHANE (UG/L)			DET'N LIMIT = .100 GUIDELINE = 350 (A1+)					
MAY	BDL	.300 <T	.	.	.	.300 <T	.	.200 <T
JUN	BDL	.300 <T	.	.	.	IU	.	.200 <T
JUL	.100 <T	.400 <T	.	.	.	.400 <T	.	BDL
AUG	BDL	BDL	.	.	.	.500 <T	.	.500 <T
SEP	BDL	.400 <T	.	.	.	.300 <T	.	.200 <T
OCT	BDL	1.000	.	.	.	.	.	.900 <T
NOV	.	.500 <T	.	.	.	.	.	.400 <T
T-CHLOROETHYLENE (UG/L)			DET'N LIMIT = .050 GUIDELINE = 10.0 (C2)					
MAY	BDL	BDL	.	.	.	BDL	.	BDL
JUN	BDL	BDL	.	.	.	IU	.	BDL

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM					
			SITE 1		SITE 3		SITE 2	
TYPE	RAW	TREATED	STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW
JUL	BDL	BDL	.	.	.	BDL	.	BDL
AUG	BDL	.050 <T	.	.	.	BDL	.	BDL
SEP	BDL	BDL	.	.	.	BDL	.	BDL
OCT	BDL	BDL	.	.	.	.	.	BDL
NOV	.	BDL	.	.	.	.	.	BDL
BROMOFORM (UG/L)			DET'N LIMIT = .200 GUIDELINE = 350 (A1+)					
MAY	BDL	BDL	.	.	.	BDL	.	BDL
JUN	BDL	BDL	.	.	.	IU	.	BDL
JUL	BDL	BDL	.	.	.	BDL	.	BDL
AUG	BDL	BDL	.	.	.	BDL	.	BDL
SEP	BDL	BDL	.	.	.	BDL	.	BDL
OCT	BDL	.600 <T	.	.	.	.	.	.200 <T
NOV	.	BDL	.	.	.	.	.	BDL
TOTL TRINALOMETHANES (UG/L)			DET'N LIMIT = .500 GUIDELINE = 350 (A1)					
MAY	.750 <T	203.900	.	.	.	178.700	.	186.250
JUN	BDL	249.100	.	.	.	IU	.	198.450
JUL	.500 <T	260.000	.	.	.	214.150	.	203.850
AUG	BDL	203.800	.	.	.	175.900	.	186.000
SEP	BDL	207.950	.	.	.	182.550	.	146.100
OCT	BDL	154.600	.	.	.	.	.	127.450
NOV	.	129.250	.	.	.	.	.	57.250

TABLE 5

DRINKING WATER SURVEILLANCE PROGRAM ATIKOKAN WTP 1989

SITE TYPE	RAW	TREATED	WATER TREATMENT PLANT		DISTRIBUTION SYSTEM			
			SITE 1		SITE 3		SITE 2	
			STANDING	FREE FLOW	STANDING	FREE FLOW	STANDING	FREE FLOW

TRACE LEVELS OF TOLUENE ARE LABORATORY ARTIFACTS DERIVED FROM THE ANALYTICAL METHODOLOGY.

TRACE LEVELS OF STYRENE ARE CONSIDERED TO BE LABORATORY ARTIFACTS RESULTING FROM THE LABORATORY SHIPPING CONTAINERS.

Table 6

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
BACTERIOLOGICAL			
FECAL COLIFORM MEMBRANE FILTRATION	CT/100ML	0	0 (A1)
STANDARD PLATE COUNT MEMBRANE FILTRATION	CT/ML	0	500/ML (A1)
TOTAL COLIFORM MEMBRANE FILTRATION	CT/100ML	0	5/100mL (A1)
TOTAL COLIFORM BACKGROUND MF	CT/100ML	0	N/A
CHLOROAROMATICS			
HEXACHLOROBUTADIENE	NG/L	1.000	450. (D4)
1,2,3-TRICHLOROBENZENE	NG/L	5.000	10000 (I)
1,2,3,4-TETRACHLOROBENZENE	NG/L	1.000	10000 (I)
1,2,3,5-TETRACHLOROBENZENE	NG/L	1.000	10000 (I)
1,2,4-TRICHLOROBENZENE	NG/L	5.000	10000 (I)
1,2,4,5-TETRACHLOROBENZENE	NG/L	1.000	38000 (D4)
1,3,5-TRICHLOROBENZENE	NG/L	5.000	10000 (D4)
HEXACHLOROBENZENE	NG/L	1.0	10. (C1)
HEXACHLOROETHANE	NG/L	1.000	1900. (D4)
OCTACHLOROSTYRENE	NG/L	1.000	N/A
PENTACHLOROBENZENE	NG/L	1.000	74000 (D4)
2,3,6-TRICHLOROTOLUENE	NG/L	5.000	N/A
2,4,5-TRICHLOROTOLUENE	NG/L	5.000	N/A
2,6,A-TRICHLOROTOLUENE	NG/L	5.000	N/A
CHLOROPHENOLS			
2,3,4-TRICHLOROPHENOL	NG/L	50.	N/A
2,3,4,5-TETRACHLOROPHENOL	NG/L	50.	N/A
2,3,5,6-TETRACHLOROPHENOL	NG/L	50.	N/A
2,4,5-TRICHLOROPHENOL	NG/L	50.	2600000 (D4)
2,4,6-TRICHLOROPHENOL	NG/L	50.	2000. (B4)
PENTACHLOROPHENOL	NG/L	50.	30000. (B4)
CHEMISTRY (FLD)			
FIELD COMBINED CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD FREE CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD TOTAL CHLORINE RESIDUAL	MG/L	N/A	N/A
FIELD PH	DMSNLESS	N/A	6.5-8.5 (A4)
FIELD TEMPERATURE	^{o}C	N/A	<15 ^{o}C (A1)
FIELD TURBIDITY	FTU	N/A	1.0 (A1)
CHEMISTRY (LAB)			
ALKALINITY	MG/L	.200	30-500 (A4)
CALCIUM	MG/L	.100	100. (F2)
CYANIDE	MG/L	.001	.20 (A1)
CHLORIDE	MG/L	.200	250. (A3)
COLOUR	TCU	.5	5.0 (A3)
CONDUCTIVITY	UMHO/CM	1.	400. (F2)
FLUORIDE	MG/L	.01	2.4 (A1)
HARDNESS	MG/L	.50	80-100 (A4)
MAGNESIUM	MG/L	.05	30. (F2)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE
NITRITE	MG/L	.001	1.0 (A1)
TOTAL NITRATES	MG/L	.02	10. (A1)
NITROGEN TOTAL KJELDAHL	MG/L	.02	N/A
PH	DMSNLESS	N/A	6.5-8.5(A4)
PHOSPHORUS FIL REACT	MG/L	.0005	N/A
PHOSPHORUS TOTAL	MG/L	.002	.40(F2)
TOTAL SOLIDS	MG/L	1.	500. (A3)
TURBIDITY	FTU	.02	1.0 (A1)
METALS			
ALUMINUM	UG/L	.050	100. (A4)
ANTIMONY	UG/L	.050	10. (F3)
ARSENIC	UG/L	.050	50. (A1)
BARIUM	UG/L	.020	1000. (A1)
BORON	UG/L	.200	5000. (A1)
BERYLLIUM	UG/L	.010	0.20 (H)
CADMIUM	UG/L	.050	5.0 (A1)
COBALT	UG/L	.020	1000. (H)
CHROMIUM	UG/L	.100	50. (A1)
COPPER	UG/L	.100	1000. (A3)
IRON	UG/L	5.0	300. (A3)
MERCURY	UG/L	.01	1.0 (A1)
MANGANESE	UG/L	.050	50. (A3)
MOLYBDENUM	UG/L	.020	500. (H)
NICKEL	UG/L	.100	50. (F3)
LEAD	UG/L	.020	50. (A1)
SELENIUM	UG/L	.200	10. (A1)
SILVER	UG/L	.020	50. (A1)
STRONTIUM	UG/L	.100	2000. (H)
THALLIUM	UG/L	.010	13. (D4)
TITANIUM	UG/L	.100	N/A
URANIUM	UG/L	.020	20. (A2)
VANADIUM	UG/L	.020	100. (H)
ZINC	UG/L	.020	5000. (A3)
PHENOLICS			
PHENOLICS (UNFILTERED REACTIVE)	UG/L	.2	2.0 (A3)
PESTICIDES & PCB			
ALDRIN	NG/L	1.0	700. (A1)
AMETRINE	NG/L	50.	300000. (D3)
ATRAZINE	NG/L	50.	60000. (B3)
ALPHA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	700. (G)
BETA HEXACHLOROCYCLOHEXANE (BHC)	NG/L	1.0	300. (G)
GAMMA HEXACHLOROCYCLOHEXANE(LINDANE)	NG/L	1.0	4000. (A1)
ALPHA CHLORDANE	NG/L	2.0	7000. (A1)
GAMMA CHLORDANE	NG/L	2.0	7000. (A1)
BLADEX	NG/L	100.	10000. (B3)
DIELDRIN	NG/L	2.0	700. (A1)
METHOXYCHLOR	NG/L	5.0	900000. (B1)
ENDOSULFAN 1 (THIODAN I)	NG/L	2.0	74000. (D4)
ENDOSULFAN 2 (THIODAN II)	NG/L	4.0	74000. (D4)
ENDRIN	NG/L	4.0	200. (A1)
ENDOSULFAN SULPHATE(THIODAN SULPHATE)	NG/L	4.0	N/A
HEPTACHLOR EPOXIDE	NG/L	1.0	3000. (A1)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE	
HEPTACHLOR	NG/L	1.0	3000.	(A1)
METOLACHLOR	NG/L	500.	50000.	(B3)
MIREX	NG/L	5.0	N/A	
OXYCHLORDANE	NG/L	2.0	N/A	
O,P-DDT	NG/L	5.0	30000.	(A1)
PCB	NG/L	20.0	3000.	(A2)
O,P-DDD	NG/L	5.0	N/A	
PPDDE	NG/L	1.0	30000.	(A1)
PPDDT	NG/L	5.0	30000.	(A1)
ATRATONE	NG/L	50.	N/A	
ALACHLOR	NG/L	500.	35000.	(D2)
PROMETONE	NG/L	50.	52500.	(D3)
PROPAZINE	NG/L	50.	16000.	(D2)
PROMETRYNE	NG/L	50.	1000.	(B3)
SENCOR (METRIBUZIN)	NG/L	100.	80000.	(B2)
SIMAZINE	NG/L	50.	10000.	(B3)
POLYAROMATIC HYDROCARBONS				
PHENANTHRENE	NG/L	10.0	N/A	
ANTHRACENE	NG/L	1.0	N/A	
FLUORANTHENE	NG/L	20.0	42000.	(D4)
PYRENE	NG/L	20.0	N/A	
BENZO(A)ANTHRACENE	NG/L	20.0	N/A	
CHRYSENE	NG/L	50.0	N/A	
DIMETHYL BENZO(A)ANTHRACENE	NG/L	5.0	N/A	
BENZO(E)PYRENE	NG/L	50.0	N/A	
BENZO(B)FLUORANTHENE	NG/L	10.0	N/A	
PERYLENE	NG/L	10.0	N/A	
BENZO(K)FLUORANTHENE	NG/L	1.0	N/A	
BENZO(A)PYRENE	NG/L	5.0	10.	(B1)
BENZO(G,H,I)PERYLENE	NG/L	20.0	N/A	
DIBENZO(A,H)ANTHRACENE	NG/L	10.0	N/A	
INDENO(1,2,3-C,D)PYRENE	NG/L	20.0	N/A	
BENZO(B)CHRYSENE	NG/L	2.0	N/A	
CORONENE	NG/L	10.0	N/A	
SPECIFIC PESTICIDES				
TOXAPHENE	NG/L	N/A	5000.	(A1)
2,4,5-TRICHLOROBUTYRIC ACID (2,4,5-T)	NG/L	50.	200000.	(B4)
2,4-DICHLOROBUTYRIC ACID (2,4-D)	NG/L	100.	100000.	(A1)
2,4-DICHLORORPHENOXYBUTYRIC ACID	NG/L	200.	18000.	(B3)
2,4-D PROPIONIC ACID	NG/L	100.	N/A	
DICAMBA	NG/L	100.	120000.	(B1)
PICLORAM	NG/L	100.	190000.	(B3)
SILVEX (2,4,5-TP)	NG/L	50.	10000.	(A1)
DIAZINON	NG/L	20.	20000.	(B1)
DICHLOROVOS	NG/L	20.	N/A	
DURSBAN	NG/L	20.	N/A	
ETHION	NG/L	20.	35000.	(G)
GUTHION(AZINPHOSMETHYL)	NG/L	N/A	20000.	(B1)
MALATHION	NG/L	20.	190000.	(B1)
MEVINPHOS	NG/L	20.	N/A	
METHYL PARATHION	NG/L	50.	7000.	(A1)
METHYLTRITHION	NG/L	20.	N/A	
PARATHION	NG/L	20.	50000.	(B1)

SCAN/PARAMETER	UNIT	DETECTION LIMIT	GUIDELINE	
PHORATE (THIMET)	NG/L	20.	2000.	(B3)
RELDAN	NG/L	20.	N/A	
RONNEL	NG/L	20.	N/A	
AMINOCARB	NG/L	N/A	N/A	
BENONYL	NG/L	N/A	N/A	
BUX (METALKAMATE)	NG/L	2000.	N/A	
CARBOFURAN	NG/L	2000.	90000.	(B1)
CICP (CHLORPROPHAM)	NG/L	2000.	350000.	(G)
DIALLATE	NG/L	2000.	30000.	(H)
EPTAM	NG/L	2000.	N/A	
IPC	NG/L	2000.	N/A	
PROPOXUR (BAYGON)	NG/L	2000.	90000.	(G)
SEVIN (CARBARYL)	NG/L	200.	90000.	(B1)
SUTAN (BUTYLATE)	NG/L	2000.	245000.	(D3)
VOLATILES				
BENZENE	UG/L	.050	5.0	(B1)
TOLUENE	UG/L	.050	24.0	(B4)
ETHYLBENZENE	UG/L	.050	2.4	(B4)
PARA-XYLENE	UG/L	.100	300.	(B4)
META-XYLENE	UG/L	.100	300.	(B4)
ORTHO-XYLENE	UG/L	.050	300.	(B4)
1,1-DICHLOROETHYLENE	UG/L	.100	7.0	(D1)
ETHLYENE DIBROMIDE	UG/L	.05	.05	G)
METHYLENE CHLORIDE	UG/L	.500	50.	(B1)
TRANS-1,2-DICHLOROETHYLENE	UG/L	.100	70.	(D5)
1,1-DICHLOROETHANE	UG/L	.100	N/A	
CHLOROFORM	UG/L	.100	350.	(A1+)
1,1,1-TRICHLOROETHANE	UG/L	.020	200.	(D1)
1,2-DICHLOROETHANE	UG/L	.050	5.0	(D1)
CARBON TETRACHLORIDE	UG/L	.200	5.0	(B1)
1,2-DICHLOROPROPANE	UG/L	.050	6.0	(D5)
TRICHLOROETHYLENE	UG/L	.100	50.	(B1)
DICHLOROBROMOMETHANE	UG/L	.050	350.	(A1+)
1,1,2-TRICHLOROETHANE	UG/L	.050	.60	(D4)
CHLORODIBROMOMETHANE	UG/L	.100	350.	(A1+)
TETRACHLOROETHYLENE	UG/L	.050	10.0	(C2)
BROMOFORM	UG/L	.200	350.	(A1+)
1,1,2,2-TETRACHLOROETHANE	UG/L	.050	0.17	(D4)
CHLOROBENZENE	UG/L	.100	60.	(D5)
1,4-DICHLOROBENZENE	UG/L	.100	1.0	(B4)
1,3-DICHLOROBENZENE	UG/L	.100	130.	(G)
1,2-DICHLOROBENZENE	UG/L	.050	3.0	(B4)
TRIFLUOROCHLOROTOLUENE	UG/L	.100	N/A	
TOTAL TRIHALOMETHANES	UG/L	.500	350.	(A1)
STYRENE	UG/L	.05	140.	(D5)